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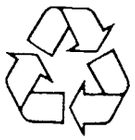

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Defense Environmental Restoration Program

Annual Report to Congress for Fiscal Year 1991

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February 1992

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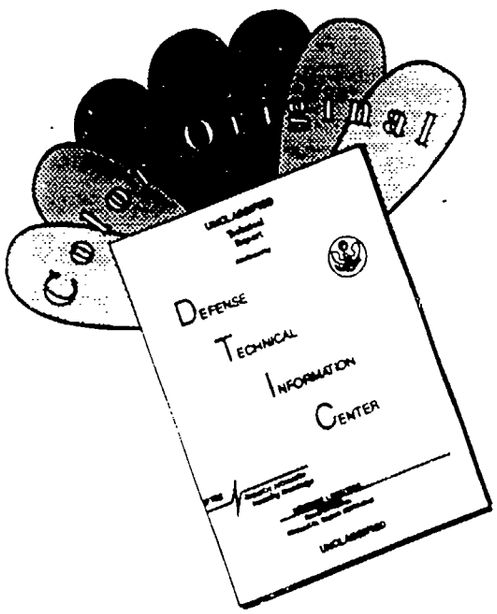

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"Our administration has crafted a new, common-sense approach to environmental issues — one that honors our love of the environment and our commitment to growth."

President George Bush

"True Leadership is more than mere compliance, it means action and commitment."

Secretary of Defense Richard Cheney

Foreword

The Department of Defense (DoD) is pleased to provide the Congress with this report on the accomplishments of the Defense Environmental Restoration Program (DERP) for Fiscal Year 1991. This last year saw steady progress throughout the Program, most notably in characterizing contamination at our facilities and selecting remedial approaches. The Department completed investigation work at a substantial number of sites and cleared the way for cleanup efforts to begin.

Our DERP efforts in Fiscal Year 1991 focused primarily on investigations leading toward the cleanup of contaminated DoD sites and formerly used properties. To this end, over 94 percent of the funds authorized by Congress for DERP this past fiscal year were invested in Installation Restoration Program (IRP) efforts. The remainder of the funds were applied to Hazardous Waste Minimization, Research and Development, and Building Demolition and Debris Removal projects. During Fiscal Year 1991, the Department focused considerable efforts on improving our ability to move sites quickly from the study phase to remediation. In addition, progress continued in various phases of the Program, the training of our personnel improved, solid progress was achieved at our National Priorities List (NPL) sites, and work advanced to the remedial action phase at many non-NPL sites.

This year, our primary effort focused on increasing our commitment and ability to move sites rapidly through the study phase of the Program and into the actual cleanup phase. DoD Components have been encouraged to begin required remediation work as quickly as is possible while abiding by appropriate regulatory criteria. The Department is confident these efforts will succeed, given adequate resources, regulatory agency cooperation and the continued dedication of DoD personnel.

Increasing the pace at which site cleanups are conducted entails many new challenges. The Department has identified several areas where considerable interagency cooperation is required to streamline the restoration process. DoD is working closely with other Federal agencies and state regulatory authorities to implement procedures for moving sites rapidly from the investigation phase to cleanup. Two such efforts are underway now. The first involves integrating overlapping regulatory programs and emphasizing the final remedial product rather than the process. The second involves an interagency effort to establish a **team approach** between DoD and the U.S. Environmental Protection Agency (EPA) project managers for selecting remedies at NPL sites. These efforts, if successful, could allow DoD to trim years from the time otherwise needed to complete many planned cleanups.

In a report recently transmitted to the Congress, the Defense Environmental Response Task Force recommended expediting required installation cleanup and land transfer at bases scheduled for closure by modifying current procedures in several areas. These areas involve land use and transfer, the cleanup process, contracting, liability concerns, regulatory responsibilities, resources, and funding. The Department is committed to pursuing all of the Task Force's recommendations.

As the IRP moves into the cleanup phase, our reliance on remediation contractors is increasing. During Fiscal Year 1991, DoD reported to the Congress on liability, bonding and indemnification issues that affect the willingness and ability of contractors to participate in site cleanups. That activity, part of our ongoing review and update of contracting strategies, will lead to changes in the contracting strategies and policies within our control. The military departments will also study risk-sharing options available for promoting appropriate and equitable allocation of risk between the Department and our cleanup contractors. DoD will continue to work with the contractor community and other interested parties to explore these and other opportunities. Through such efforts, we intend to resolve many of the remedial action contractor liability issues the Department now faces.

As the level and complexity of IRP activities increase, so does our need for effective and specialized management skills. To meet these challenges, the Department is continuing to increase the training provided to our personnel. More people are being trained in areas critical to DERP than ever before, and our training programs are expanding to cover the complex and technically diverse skills needed to manage our restoration program initiatives. Our training now includes topics such as negotiating skills needed to develop workable cleanup agreements with regulatory authorities. Last year alone, over 2,000 DoD personnel received DERP-related training.

The number of sites and installations covered by the IRP stabilized in Fiscal Year 1991, while the number of sites where IRP work is complete increased. Last year saw only a modest one percent growth in IRP site counts, as compared to the 115 percent growth that occurred over the preceding two years. In addition, pollution hazards have been removed or studies have shown that no threat to human health or the environment exists at over one-third of the 17,660 sites included in the IRP.

This past fiscal year saw advances in every phase of the IRP. From Preliminary Assessment through Remedial Action, the number of sites where these IRP activities were completed increased. Most notably, the number of sites with completed Remedial Investigation/Feasibility Study efforts rose 63 percent last year. The majority of these sites should move into the cleanup phase this year. In addition, during Fiscal Year 1991 DoD registered a 26 percent increase in the number of sites where Remedial Action projects have been completed.

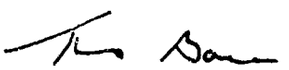
The Department also continued to pursue the investigation and cleanup of NPL sites. By the end of the year, 90 DoD installations were included on the NPL or were proposed for listing. Remedial Investigation/Feasibility Study work was underway at all 90 facilities, and cleanup had commenced at 86 sites by the end of the year. Further, the number of NPL installations covered by signed Interagency Agreements rose, from 51 in Fiscal Year 1990 to 77 at the end of last year.

DoD has placed considerable emphasis on involving state regulatory authorities in the IRP process. During Fiscal Year 1991, Defense and State Memoranda of Agreement (DSMOA) were signed with 14 states, bringing the total number of completed agreements to 29. Through these DSMOA, almost $16 million was provided to state regulatory agencies last year to allow their full participation in the evaluation and oversight of IRP activities.

The Department continues to pursue vigorous Research & Development and Hazardous Waste Minimization Programs aimed at fostering quicker, more cost-effective, remedial solutions and at reducing the amount of waste generated by our installations. These waste minimization efforts will help reduce DoD's potential for generating new hazardous waste sites.

Our progress to date is the result of the perseverance and commitment of our environmental managers. Through them, we have built a solid environmental ethic within the Department, from the installation level right up to this Headquarters. DoD is committed to continuing and building on this momentum in the coming years, ensuring that our remediation efforts progress as rapidly as possible in a cost effective manner.

This report provides Congress and the public with a comprehensive assessment of DERP efforts to date and our plans for the future. The success of these efforts is dependent upon the support we receive from Congress, environmental regulatory authorities and the public. We look forward to working together to continue the critical work required to properly remediate our sites.



Thomas E. Baca
Deputy Assistant Secretary of Defense
(Environment)

Table of Contents

The Defense Environmental Restoration Program	1
The Installation Restoration Program	2
Installation Restoration Program Status	6
Formerly Used Defense Sites	10
Army IRP Progress	12
Department of Navy IRP Progress	14
Air Force IRP Progress	16
Defense Logistics Agency IRP Progress	18
Other Hazardous Waste Program Progress	20
Research, Development, and Demonstration	22
Training of DoD Personnel in DERP Activities	24
Program Funding	27
Information Requested by the Superfund Amendments and Reauthorization Act	A-1
DoD NPL Installations	B-1
Status of IRP Installations	C-1
State Status	D-1
Formerly Used Defense Sites on the NPL	E-1
Base Closures	F-1
List of Acronyms	

The Defense Environmental Restoration Program

The Defense Environmental Restoration Program (DERP) was established in 1984 to promote and coordinate efforts for the evaluation and cleanup of contamination at Department of Defense (DoD) installations. The program currently includes:

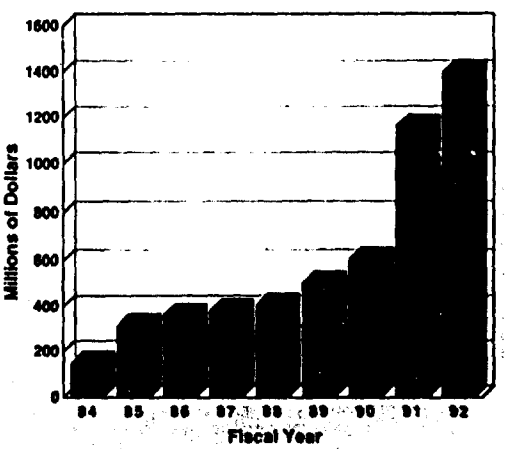
- The Installation Restoration Program (IRP), where potential contamination at DoD installations and formerly owned or used properties is investigated and, as necessary, site cleanups are conducted; and
- Other Hazardous Waste (OHW) Operations, through which research, development, and demonstration programs aimed at improving remediation technology and reducing DoD waste generation rates are conducted.

In addition, a small number of Building Demolition and Debris Removal (BDDR) projects were conducted under DERP in fiscal year (FY) 1991. These involved demolishing and removing unsafe buildings and structures at DoD installations and formerly used properties. FY 1991 marked the first time any BDDR projects had been conducted under DERP since FY 1987.

DERP is managed centrally by the Office of the Secretary of Defense. Policy direction and oversight of DERP is the responsibility of the Deputy Assistant Secretary of Defense (Environment). Each individual defense component is responsible for program implementation.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) provides continuing authority for the Secretary of Defense to carry out this program in consultation with the U.S. Environmental Protection Agency (EPA). Executive Order 12580 on Superfund Implementation, signed by the President on January 23, 1987, assigned responsibility to the Secretary of Defense for carrying out the Department's Environmental Restoration Program within the overall framework of SARA and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The Defense Appropriations Act provides the primary funding for DERP. Funding for restoration work at bases scheduled for closure is provided by the Base Closure Account.

DERP Funding



DERP funding has grown steadily, from $150 million in FY 1984 to over $1.4 billion in FY 1992. The FY 1992 funding includes $220 million for restoration of bases scheduled for closure.

The Installation Restoration Program

The Installation Restoration Program (IRP) conforms to the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA guidelines are applied in conducting investigation and remediation work in the program.

The initial stage, a **Preliminary Assessment** or **PA**, is an installation-wide study to determine if sites are present that may pose hazards to public health or the environment. Available information is collected on the source, nature, extent, and magnitude of actual and potential hazardous substance releases at sites on the installation. The next step, a **Site Inspection** or **SI**, consists of sampling and analysis to determine the existence of actual site contamination. The information gathered is used to evaluate the site and determine the response action needed. Uncontaminated sites do not proceed to later stages of the IRP process.

Contaminated sites are investigated fully in the **Remedial Investigation/Feasibility Study** or **RI/FS**. The RI may include a variety of site investigative, sampling, and analytical activities to determine the nature, extent, and significance of contamination. The focus of the evaluation is determining the risk to the general population posed by the contamination. Concurrent with these investigations, the FS is conducted to evaluate remedial action alternatives for the site.

After agreement is reached with appropriate EPA and/or state regulatory authorities on how to clean up the site, **Remedial Design/ Remedial Action** or **RD/RA** work begins. During this phase, detailed design plans for the cleanup are prepared and implemented.

A notable exception to this sequence involves Removal Actions and Interim Remedial Actions (IRAs). These actions may be conducted at any time during the IRP to protect public health or control contaminant releases to the environment. Such measures may include providing alternate water supplies to local residents, removing concentrated sources of contaminants, or constructing structures to prevent the spread of contamination.

Each step in the IRP process is thoroughly documented in reports available to the general public. Individuals or organizations can obtain copies of these documents by contacting the Public Affairs Offices at the installations in which they are interested. In addition, public meetings and hearings are also held at various times during the cleanup process to further facilitate public participation.

The National Priorities List (NPL)

EPA established a Hazard Ranking System (HRS) for evaluating contaminated sites based on the potential hazard posed to public health and the environment. In 1991, a revised Hazard Ranking System was adopted by EPA for evaluating future sites. The application of these ranking systems, using PA/SI data, generates a score for each site evaluated. The score is computed based on factors such as the amount and toxicity of the contaminants present, their potential mobility in the environment, the availability of pathways for human exposure, and the proximity of population centers to the site.

The NPL is a compilation of sites scoring 28.5 or higher under HRS. Such sites are first proposed for NPL listing. Following a public comment period, proposed NPL sites may be listed final on the NPL or may be deleted from consideration.

IRP Priorities

The order in which DoD conducts IRP project activities is based on a policy assigning the highest priorities to sites that represent the greatest potential public health and environmental hazards. Top priority is assigned to:

- Removal of imminent threats from hazardous or toxic substances or unexploded ordnance (UXO);
- Interim and stabilization measures to prevent site deterioration and achieve life cycle cost savings;
- RI/FSs at sites either listed or proposed for the NPL and RD/RAs necessary to comply with SARA.

Anticipating the need to refine priorities as the DERP matures and a large number of sites simultaneously reach the costly cleanup phase, DoD developed the Defense Priority Model (DPM). Unlike HRS, which uses only PA/SI data to score sites, DPM uses the more detailed data available from the RI to produce a score indicating the relative risk to human health and the environment presented by a site. The model considers the following site characteristics:

- Hazard – the characteristics, concentrations and mobility of contaminants;
- Pathway – the potential for contaminant transport via surface water, ground water and air/soil;
- Receptor – the presence of potential human and ecological receptors.

This risk-based approach recognizes the importance of protecting public health and the environment and helps to identify objectively those sites that should receive priority for funding.

In FY 1989, DoD completed initial development of DPM. In response to comments received from EPA, the state, environmental organizations, and the public, the model was refined.

In the last two years, considerable effort has been committed to improving DPM's performance and reliability. This work has resulted in an accurate and user-friendly system that uses key data produced during the RI and allows site comparisons on the basis of risk. Although we will continue to strengthen DPM through added system refinements, the existing system is fully capable of supporting our IRP prioritization needs. We are also continuing a dialogue with EPA and other federal agencies to identify a common approach to prioritization.

Almost 200 DoD personnel were trained in the most recent version of DPM during FY 1991. A complete support network, including a user hotline, has been established. Prior to receiving DERP funding for RD/RA efforts, virtually all IRP sites are now scored using DPM.

To date, funding has been adequate to support all executable cleanups. This situation will change as many sites now under study become ready for remediation simultaneously. In a constrained funding situation, DPM will provide an excellent means for identifying sites to receive funding first.

Base Closures

The Base Closure and Realignment Acts of 1988 (BRAC 88) and 1990 (BRAC 90) resulted in the identification of 113 military bases scheduled for closure and another 62 installations scheduled for realignment. Appendix F of this report identifies those installations scheduled for closure. Considerable investigation and, in certain cases, remediation may be required before properties at closed bases can be transferred from DoD or used for other purposes.

Congress is providing $220 million during FY 1992 through the DoD BRAC 88 Account for environmental restoration at bases scheduled for closure. DoD is applying the same remediation methodologies and protocols used at other IRP sites to cleanup efforts at installations scheduled for closure or realignment.

In response to specific requirements contained in the FY 1991 National Defense Authorization Act, a Task Force created last year identified ways to improve federal-state coordination of environmental response actions and streamline cleanup at bases to be closed or realigned. In addition to DoD, this Defense Environmental Response Task Force included participants from the U.S. Department of Justice, EPA, the General Services Administration, the National Governors' Association, the National Association of Attorneys General, and environmental organizations.

The Task Force recently reported to Congress on several measures to improve the restoration process. Their recommendations included the adoption of procedures and criteria to guide the transfer and use of contaminated DoD lands, the integration of overlapping regulatory requirements, and measures to improve coordination among Federal and state decision makers.

DoD is committed to pursuing all Task Force recommendations. The success of these efforts should improve our ability to complete cleanup work rapidly at all Department IRP sites.

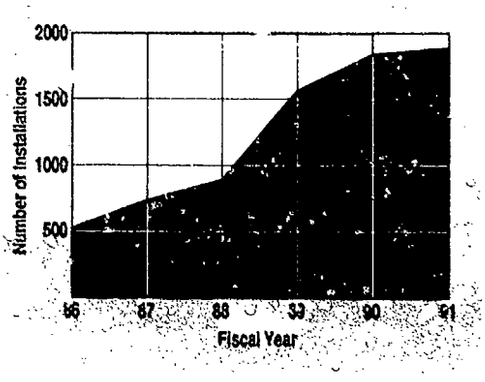
IRP Activity Levels Have Stabilized

After two years of substantial growth, the number of installations included in the IRP stabilized in FY 1991. Consistent with the Department's worst-first policy, emphasis initially was placed on identifying industrial facilities with the highest probability for contamination. Efforts expanded yearly to include installations with lower hazard potential. In addition, installation reassessments initiated to satisfy SARA requirements as well as Resource Conservation and Recovery Act (RCRA) Corrective Action efforts continued to locate additional sites not previously included in the program.

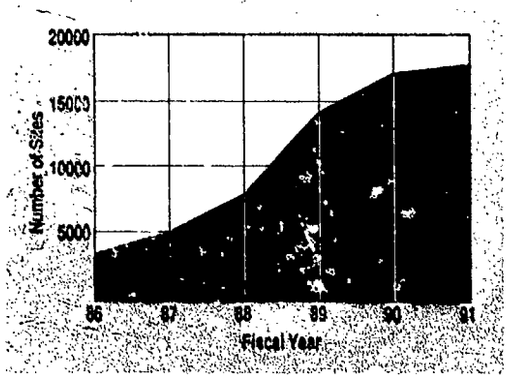
These efforts resulted in a 115 percent growth in the number of IRP sites during the FY 1989 and 1990 time period. In contrast, IRP site counts increased by only one percent during FY 1991. At the end of last year, a total of 17,660 sites at 1,877 installations were included in the IRP.

The number of DoD installations listed on the NPL did not increase in FY 1991. However, one new DoD installation was proposed for listing last year. By the end of FY 1991, 89 DoD installations were listed on the NPL and one was on the proposed list. (Because EPA has divided seven installations into two NPL listings each, 96 DoD installation listings appear on the NPL.)

Installations



Sites



DoD Supports State Participation Through DSMOA

To facilitate active state participation in the IRP, a process was developed that allows DoD to reimburse the states for up to one percent of costs. This procedure was developed through lengthy negotiations between DoD and the Association of State and Territorial Solid Waste Management officials, the National Governors' Association, and the National Association of Attorneys General.

These negotiations resulted in the development of the model Defense and State Memoranda of Agreement (DSMOA) in 1989. The DSMOA not only address state agency technical support at NPL sites, but also provide the process for work at non-NPL sites. Along with non-NPL reimbursement, the DSMOA provide a process for DoD and the states to resolve technical disputes before judicial remedies are sought. The DSMOA also include provisions reflecting the willingness of the state to accept DPM as DoD's method of establishing priorities among sites in the event of a funding shortfall.

Reimbursement is available through a Cooperative Agreement (CA) to those states that have signed DSMOA. The Commander, U.S. Army Corps of Engineers (USACE), is the DoD Executive Agent for negotiating DSMOA and receiving, processing, and monitoring CA applications. Each CA covers a two-year period.

States' reporting requirements under CAs are minimal and allow them to transfer their oversight funding between installations. Past costs incurred after October 17, 1986 (the date SARA was enacted) also are covered in the CA. Base Realignment and Closure and Defense Logistics Agency Stock Fund installations are also included in the program for reimbursement.

To date, three workshops have been held at which DoD, EPA and state representatives have met to explore ways to improve the IRP and DSMOA/CA processes. These workshops have helped to further solidify the DoD/state cooperative working relationships essential to the success of the IRP.

Cooperative interchange between the states and the various services at environmental workshops "...is building the necessary bridges to develop the problem-solving teams envisioned for the Superfund/DERP cleanup process."

Enrique P. Gentzsch
Minnesota Pollution Control Agency

All states and territories have been contacted and encouraged to participate in the DSMOA process. Favorable responses have been received from 48 states and territories. DoD signed 14 DSMOA in FY 1991, bringing the total of signed memoranda to 29. In addition, 14 CAs were completed last year, yielding a total of 26 finalized agreements. Almost $16 million was provided to states in FY 1991 under these CAs to enhance their participation in the IRP process. Appendix D, Table D-2 provides state-by-state DSMOA status.

The progress made in FY 1991 in preparing DSMOA and CAs represents a significant achievement in enhancing cooperation among DoD and state authorities. The establishment of Interagency Agreement (IAG), CA, and DSMOA models and the training of DoD and state personnel in their development helps provide a nationally consistent process for effective site cleanup.

IAGs Are A Critical Step in the Cleanup of NPL Sites

SARA requires that an IAG be reached between EPA and DoD within 180 days after completion of the Record of Decision (ROD) for each NPL-listed facility. The ROD, a public document explaining which cleanup alternatives will be used at an installation, marks the completion of the RI/FS. (An exception involves interim RODs sometimes used to document agreements concerning Interim Response Actions.) The completed IAG provides a detailed management plan for the effective cleanup of the facility.

The involvement of EPA and state authorities in preparing the IAG ensures their concurrence and enhances the credibility of the course of action taken by DoD. The IAG also provides a strong management tool for resolving issues rising from overlapping or conflicting jurisdictions.

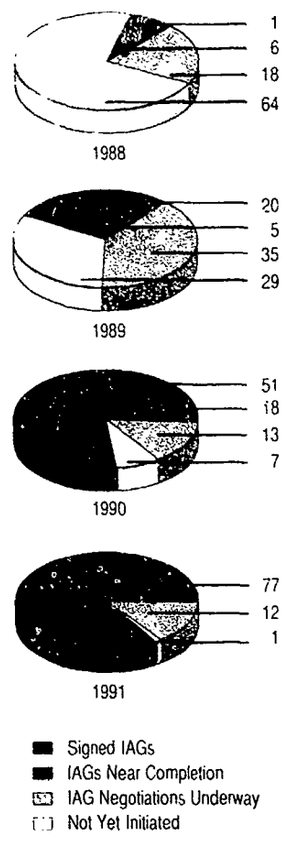
The IAG negotiation process involves personnel from the applicable DoD Component, the EPA regional office and state environmental authorities. Identifying and resolving issues typically takes several months. Once the parties conclude negotiations, the agreement is signed and made available for public comment to fulfill regulatory requirements. Comments received are considered and appropriate changes are made before the agreement goes into effect. The IAG can also serve to fulfill corrective action requirements.

The Department recognizes the advantages of involving all parties well before the IAG is required (i.e., before the ROD). Accordingly, DoD involves EPA and the states in the IRP process from early assessment and characterization through final cleanup of the site.

The Department seeks a cooperative and collaborative ongoing effort with all parties to avoid discovering problems late in the process that could result in costly delays. The early establishment of good working relationships also resolves potentially duplicative and possibly conflicting regulatory requirements governing cleanup, such as those that occur between CERCLA and RCRA. To fully realize these benefits, we are routinely entering into IAGs during the RI/FS phase. These "pre-ROD" IAGs, or Federal Facilities Agreements (FFAs), are amended as IRP work progresses and become the IAG required under SARA.

In 1988, the Department and EPA completed negotiation of IAG model language for NPL sites. Subsequent guidance was issued to the components concerning the state role in the IAG process. Nationwide, the negotiations simultaneously accelerated. Workshops were held with EPA and state agencies to refine site-specific language for the agreements. Training sessions for DoD personnel who will negotiate agreements also were held.

IAG Status at NPL Installations



The progress already made is evident from the number of IAGs signed and nearing completion. By the end of FY 1990, IAGs had been signed for 51 DoD installations final-listed on the NPL. By the end of FY 1991, this number grew to 77. In addition, another 12 IAGs were near completion.

To help expedite cleanups at contaminated installations, sites are often grouped (or in some cases divided) to form Operable Units (OUs). Rather than delaying RA activities until agreement is reached on cleanup procedures at all sites on an installation, individual OUs at an installation are allowed to progress independently through the IRP process. At many DoD NPL installations, this approach will result in the completion of multiple RODs and IAGs, each covering one or more OUs.

Installation Restoration Program Status

During FY 1991, DoD increased its efforts to expedite the start of remediation work at all sites where it is required. We recorded real progress in moving sites into the cleanup phase last year, registering substantial advances in completed site investigation activities. However, we must continue to find ways to accelerate the pace of site cleanups. To that end, several initiatives were undertaken in FY 1991 to help streamline the transition from investigation to cleanup and to move restoration actions along at a quicker pace. Ultimately, these efforts will reduce human health and environmental risks at DoD sites and minimize program costs.

In October, the Defense Environmental Restoration Task Force reported to Congress on several issues critical to expediting required IRP cleanups. Their recommendations are being actively pursued through several DoD and interagency projects. We have formed "Experts Groups" with the Department of Energy (DOE) and EPA to pursue standardized approaches for dealing with restoration issues. In a joint effort with EPA, we also are nearing completion of a management guide for moving sites quickly into the cleanup phase. A major focus of these efforts is the timely remediation of our NPL sites and defense installations scheduled for closure.

This past year the Department also took steps to ensure the availability and proper management of resources needed to expedite required site cleanups. In two separate reports submitted to Congress during FY 1991, we identified our long-term IRP funding requirements and evaluated issues related to our remedial action contractors' liabilities.

As described in the Program Funding section of this report, we now estimate the total cost to complete the IRP to be $24.5 billion, including FY 1991 funds. Last year also saw continued improvements in our capability to prioritize funding among sites to be remediated.

We have taken several actions to address contractor liability issues and to ensure that quality, cost-effective remediation services will be available in the future. We also are evaluating measures for providing equitable risk sharing between the government and remediation contractors.

Installation Restoration Program
Summary of Installations and Sites

Service	Number of Installations	Number of Sites	Number of Active Sites	Closed-Out Sites*
Army	1,265	10,578	5,524	5,054
Navy**	247	2,409	1,688	721
Air Force	331	4,354	3,520	834
DLA***	34	319	192	127
Total	1,877	17,660	10,924	6,736

*Formerly "Sites Requiring No Further Action."
**Includes Marine Corps.
***DLA = Defense Logistics Agency.

Across-the-Board Progress Registered in the IRP

The IRP gained significant momentum in FY 1991. By the end of the fiscal year, 6,336 projects were actively underway at sites throughout the nation. In keeping with the Department's worst-first policy, considerable effort has been focused on the 90 DoD installations included on or proposed for the NPL. Of the 372 remedial activities completed to date (Removal Actions, IRAs, and final RAs), 207 have been at NPL sites.

The end point for IRP sites is closeout. A closed-out site is one where no further actions are considered appropriate and no further response action is planned (NFRAP). NFRAP is a CERCLA term incorporated into the NCP final rule in March 1990. The primary criteria for NFRAP is a determination that the site does not pose a significant threat to public health or the environment. NFRAP decisions can be made at any point in the IRP process, but must be documented and may be reversed if future information reveals that additional remedial activities are warranted. The majority of site closeout decisions are for non-NPL sites. These decisions are made by the components and then coordinated with the appropriate regulatory agencies.

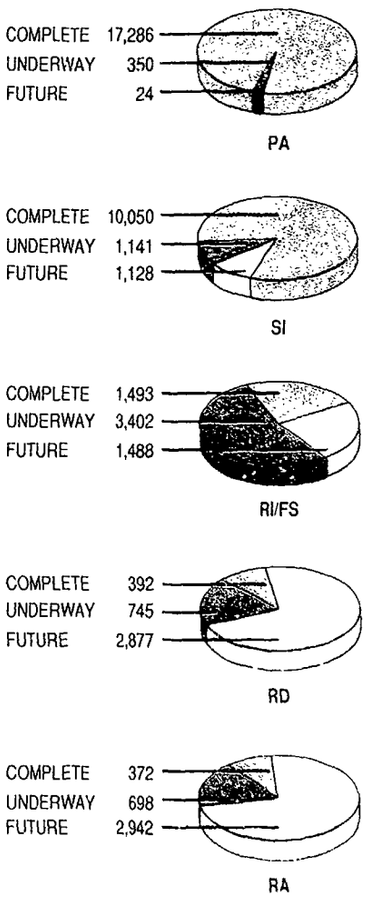
At the end of FY 1991, DoD components had identified 6,736 sites, or more than 38 percent of the total number of IRP sites, as closed out (i.e., in the NFRAP category). Although some sites could be reactivated in the future by regulatory authorities or the components, their closeout represents significant real progress in the IRP.

By the end of FY 1991, PAs had been completed at 17,286 of the 17,660 identified IRP sites. SIs had been completed at 10,050 sites. The majority of site closeouts registered to date have occurred as a result of PAs in which no evidence of contamination was found.

At the end of FY 1991, RI/FS efforts had been completed at 1,493 sites. This represents a 63 percent increase in RI/FS completions from the previous year. RI/FS activities are either complete or underway at 77 percent of the sites where they are known to be needed.

At the end of FY 1991, 4,012 sites had been identified where remedial activities are needed. Of these, 372 had been completed. This represents a 26 percent increase in completed RAs from FY 1990. Further, 698 sites had RAs underway at the end of the year.

IRP Status by Program Phase



Installation Restoration Program Status as of September 30, 1991
Summary by Military Service

	Number of Sites (by Phase)																	
	PA				SI				RI/FS				RD			RA		
	C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
Army	10,567	6	5	4,763	4,330	192	1,050	242	355	955	886	49	141	234	1,075	146	237	1,079
Navy*	2,362	43	4	200	1,580	477	68	506	38	91	529	10	9	27	1,286	60	18	1,330
Air Force	4,038	301	15	75	3,821	472	10	526	1,053	1,313	69	165	230	475	387	150	415	404
DLA	319	0	0	0	319	0	0	104	47	163	4	23	12	9	129	16	8	129
Totals	17,286	350	24	5,038	10,050	1,141	1,128	1,378	1,493	3,402	1,488	247	392	745	2,877	372	698	2,942

C = Completed Activity ♦ U = Underway Activity ♦ F = Future Activity Planned ♦ CO = Closed-Out Sites
*Includes Marine Corps.

Remedial Activities Initiated in FY 1991
Summary for all IRP Installations

Type of Activity	Number of Activities	Number of Installations
Alternate Water Supply/Treatment	12	11
Incineration	2	2
Site Treatment/ Remediation	85	50
Decontamination	3	3
Waste Removal	116	67
Ground Water Treatment	35	30
TOTAL	253	163

During FY 1991, 253 remedial activities were undertaken at 163 installations. The number of actions is greater than the number of installations, as more than one type of action was taken at some installations.

Solid Progress is Evident at NPL Sites

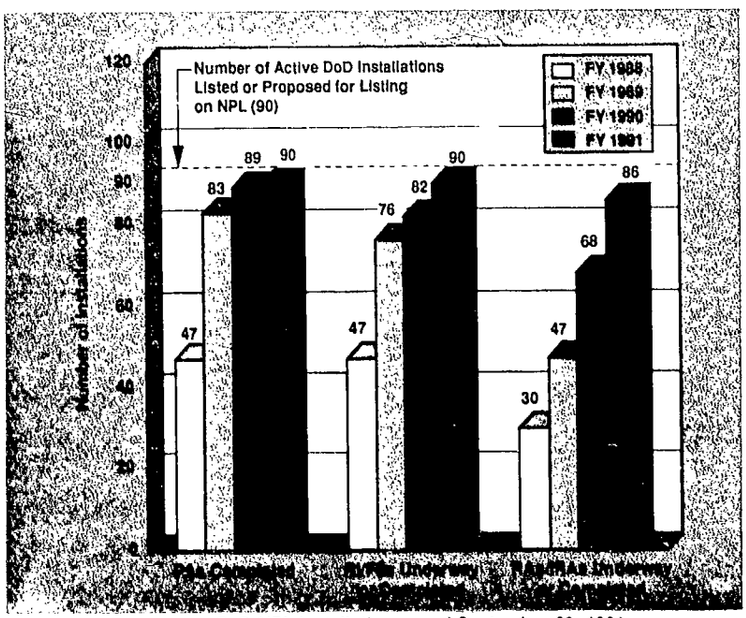
The Department made steady gains in the evaluation and cleanup of NPL sites in FY 1991. Completed PA activities at all the Department's 90 NPL installations increased from 89 to 90. The number of RI/FSs completed or underway went from 81 to 90. Further, the number of installations at which interim remedial actions were taken or RAs were underway increased from 68 to 86 in FY 1991.

FY 1991 also saw the completion of RODs for at least one OU at eight NPL installations: Bangor Naval Submarine Base, Washington; Lakehurst Naval Air Station, New Jersey; Castle Air Force Base (AFB), California; Fort Dix, New Jersey; Letterkenney Army Depot, Pennsylvania; Dover AFB, Delaware; McChord AFB, Washington; and Robbins AFB, Georgia. This brings to 12 the number of NPL installations with signed RODs. Although each completed ROD generally covers only a portion of the installation, they all contribute to the final and complete restoration of the installation.

"Expert Groups" are Tackling Bottlenecks in the Cleanup Process

Although DoD continues to make progress in restoring contaminated sites, the rate at which we are able to move sites from investigation through cleanup is being delayed by 'bottlenecks' in the system. To remove these delays, DoD, EPA and DOE have formed Interagency "Experts Groups" that are actively exploring coordinated approaches for expediting required Federal facility site cleanups.

One key area where the Experts Groups are focusing attention involves innovation in the cleanup process. Current approaches for selecting remedial approaches discourage new and unproven technologies. Although this reduces the risk of failure, the development of faster or more cost-effective innovative techniques is stifled.



Restoration Progress at DoD NPL Installations as of September 30, 1991

An underlying difficulty associated with many system bottlenecks already identified results from approaches that emphasize the restoration **process** rather than its final objectives. Through the ongoing efforts of the Experts Groups, as well as other parallel interagency initiatives, we are developing workable solutions to solve these problems. We are committed to vigorously pursuing the challenges identified by the Experts Groups and, in the process, making the IRP as efficient and effective as is possible.

EPA and DoD Map the "Road to the ROD"

As an example of the interagency cooperation critical to expediting IRP progress, EPA Region III and DoD used the principles of Total Quality Management to examine the restoration process. We have jointly authored a guide that describes the most effective approaches for taking a site from the RI/FS through ROD signing. The document is intended for remedial project managers at DoD as well as EPA and state regulatory authorities. It is based on lessons learned in completing RODs at other NPL sites, and offers helpful insights into planning and executing the transition from investigation to cleanup, with special emphasis on ways to speed the process. The final document, titled "The Road to ROD," was published early in calendar year 1992.

Such efforts will help speed the pace of IRP progress by establishing a clear basis of requirements for the complicated interactions that must take place between DoD and regulatory agencies. The document also focuses on the importance of DoD/EPA teamwork in streamlining the decisionmaking process. Through their implementation, the approaches delineated in "The Road to ROD" will serve to build the interagency cooperation essential to the IRP's long term success.

Risk Sharing Will Help Ensure Adequate Contractor Support

The IRP relies heavily on the services of private contractors for site remediation work. Increasingly, the contracting community has expressed reservations about its willingness to undertake cleanup work for DoD because of the perceived financial risks involved. During FY 1991, the Department completed an extensive study of contractor liability and indemnification issues and reported to Congress on several areas where improvements are warranted.

At present, some remedial action contractors are unable to secure adequate insurance because the insurance industry is reluctant to become involved in work where the risks are uncertain and potentially large. In addition, contractors are hampered in obtaining performance bonds for DoD remediation work as required under the Miller Act. This situation poses potential problems for the continued future progress of the IRP.

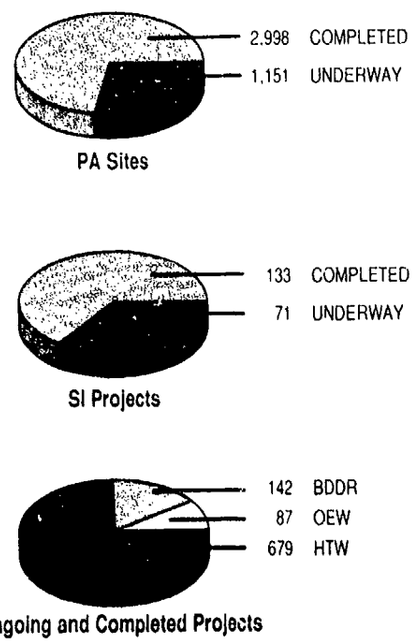
The Department is currently able to get adequate competition on our remedial contracts and has obtained quality remedial services to date. However, we are concerned that the current situation may lead to reduced competition by qualified contractors for future DoD remediation work, cost escalation, lower quality and increased risk to the public.

To help ensure that adequate remedial contractor support remains available, DoD is implementing changes in the areas within our control. These include improving our contracting strategies, reducing the amounts of bonds required, using rolling or phased bonds, allowing irrevocable letters of credit in lieu of bonds, and retaining Department control over certain elements of remedial work. We will continue to pursue these and other measures that provide for appropriate sharing of the risks involved in remediation work. Throughout these efforts, careful consideration will be given to the cost implications of various strategies as compared with the long-term liabilities to the government and its contractors.

Formerly Used Defense Sites

The Secretary of the Army is the DoD Executive Agent for implementing DERP at Formerly Used Defense Sites (FUDS). As Executive Agent, the Army is responsible for environmental restoration activities under DERP on lands formerly owned or used by any DoD Component. The USACE is responsible for executing the FUDS program. Investigation and cleanup procedures at formerly used sites are similar to those at currently owned installations. However, information concerning the origin of the contamination, land transfer information, and current ownership must be evaluated before DoD considers a site eligible for restoration.

Status of Activities at Formerly Used Properties



The additional funding allocated to the FUDS program in FY 1991 accelerated the progress of IRP activities. During FY 1991, over 630 PAs were completed and nearly 750 new PAs were initiated. The number of RI/FS projects underway increased from 29 to 63. New BDDR projects were initiated or completed for the first time since FY 1987.

A total of 6,786 FUDS with potential for inclusion in the program have been identified through inventory efforts. The number of FUDS decreased in FY 1991 because of improved tracking and the resulting deletion of site duplicates. By the end of FY 1991, PAs had been initiated at 4,149 sites. Of these, 1,151 were underway and 2,998 were complete. Based on the completed PAs, we have determined that 1,975 sites are eligible and 1,023 sites are ineligible for the FUDS program. Of the eligible sites, 897 require no further action. Each of the other 1,078 sites requires one or more remedial/removal projects. SIs had been completed for 133 projects and were underway for another 71 projects by the end of FY 1991.

DoD has already funded 908 projects for further investigation and remedial action. These activities include 679 projects addressing hazardous or toxic waste (HTW) contamination from formerly used underground storage fuel tanks, landfills, and leaking polychlorinated biphenyl (PCB) transformers. Also included are 87 projects for detection and removal of ordnance and explosive waste (OEW) from former target ranges or impact areas. Prior to FY 1988, 94 BDDR projects involving unsafe buildings or structures on formerly owned or used properties were completed. No BDDR projects were conducted between FY 1988 and FY 1990. In FY 1991, work at 48 BDDR sites was initiated and BDDR efforts at 15 other sites were completed.

USACE also represents DoD interests at NPL sites where former properties are located and where DoD may be a Potentially Responsible Party (PRP). Former properties that have passed from DoD

control may have been contaminated by past DoD operations as well as by other owners, making DoD one of several PRPs. Ongoing USACE efforts will determine the allocation, if any, of DoD cleanup responsibility.

In FY 1990, 12 FUDs were listed on the NPL. One site, United Chrome Products, was deleted from DERP in early FY 1991 as a result of a determination that DoD was not responsible for the contamination of the site. As a result, 11 FUDS were listed on the NPL by the end of FY 1991. Ten of the sites are described in Appendix E. The eleventh site, West Virginia Ordnance Works, is a formerly owned site that is being remediated under the Army IRP and is described in Appendix B. All work for this site will be transitioned from the Army into the FUDS Program in FY 1992.

In FY 1991, $88.9 million was invested in IRP activities at former sites. The following are examples of work undertaken by USACE at formerly used properties last year. (Appendix E provides additional details for FUDS on the NPL.)

Rapid Response at the Commonwealth of VA Emergency Fuel Storage Facility, VA

In March 1991, officials from the Governor's office informed USACE of potential contamination at this site (previously part of Cheatham Annex). The site covers 435 acres and was owned and operated by the Navy. The USACE Rapid Response Team (RRT) immediately initiated a rapid response action in coordination with and approval of the Commonwealth of Virginia. The site contamination resulted from leaking underground storage tanks (USTs) and indiscriminate dumping of sludges and drums on site. The RRT excavated petroleum contaminated soil and removed 98 drums from the sludge pit. The sludge pit was lined, back-filled, graded and landscaped within four months.

Over 100,000 pieces of ordnance were recovered during the remedial actions conducted at the former Raritan Arsenal.

Removal Action at Sioux City, IA

In 1991, a removal action was conducted by USACE at the former 2,319-acre Sioux City Army Air Base in Sioux City, Iowa. Thirty-five USTs and fifteen leaking PCB transformers were removed to prevent contamination of soils and ground water at the site. Further, soil and ground water samples were collected and analyzed to determine if PCB contamination had occurred. Laboratory results show that no soil or ground water contamination exists.

Ordnance Removal at Former Raritan Arsenal, NJ

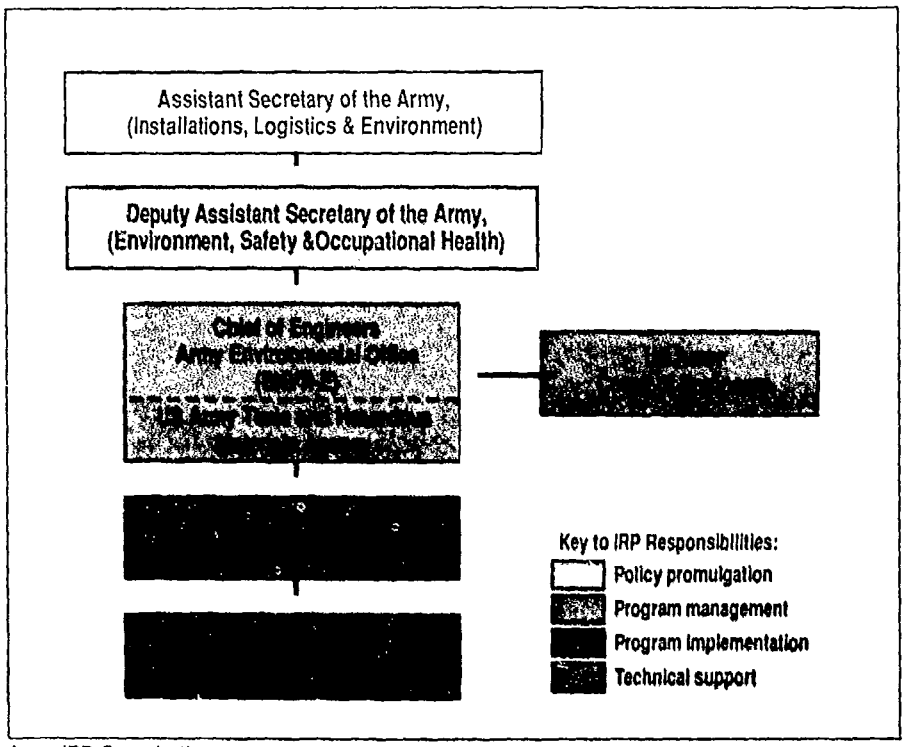
The former Raritan Arsenal in New Jersey, a 3,200-acre ordnance handling facility, was excessed by DoD in the early 1960s. An ordnance clearance operation was initiated in March 1991 to remove UXO from the site. Over 100,000 pieces of ordnance were recovered and detonated on-site. To minimize noise disturbances in surrounding urban and residential areas, detonation was conducted under optimum conditions that were determined through configuration tests using seismic and overpressure monitoring. Ordnance recovery operations are still underway and will continue until the cleanup is complete.

"Environmental ethics and values must not be an overlay. They must be 'bone deep,' part of our foundation ethic, part of our normal way of doing business."

Lt. Gen. H.J. Hatch
Chief of Engineers

Army IRP Progress

The number of sites included in the Army IRP increased from 10,459 in FY 1990, to 10,578 in FY 1991. IRP activities have been completed and no further remedial actions are planned at 5,054 sites, or almost one-half of the Army sites in the program.



Army IRP Organization

The Army's major accomplishments in FY 1991 include significant progress in its RI/FS work and remedial activities. During FY 1991, the number of sites where RI/FS work was completed increased from 301 to 355. The additional funding allocated to the Army was invested primarily in the implementation of remedial alternatives agreed to in RODs. For example, during FY 1991, several treatment systems began operating to remove contaminants from ground water at Army NPL installations.

By the end of FY 1991, PA work had been completed at all but 11 Army IRP sites. SI work had been completed at 4,330 sites, or 78 percent of the sites where it is known to be required.

In FY 1991, IAGs were signed covering six Army NPL installations, bringing the total number of Army NPL installations covered by IAGs to 29. RI/FS activities are underway or completed at all Army NPL facilities. Removal actions and IRAs have occurred at 31 of the 32 Army NPL facilities.

The following are examples of significant Army IRP project activities conducted in FY 1991. (Appendix B provides additional details for installations on the NPL.)

Ground Water Treatment System at Anniston Army Depot, AL

In 1991, an interim ROD was signed at Anniston Army Depot for the Ground Water Operable Unit. The ROD documents the ground water extraction and treatment system installed in 1990 prior to Anniston Army Depot's placement on the NPL. The system removes volatile organics through air strippers and phenolic compounds through charcoal filtration. It is treating an average of 100,000 gallons per day from major areas of contamination within the Southeast Industrial Area, which includes the Landfill Area, the Trench Area and the Northeast Area.

Ground Water Remediation at Riverbank AAP, CA

To prevent the spread of ground water contamination, the Army has installed an interim ground water treatment system at Riverbank Army Ammunition Plant that captures and treats contaminated ground water. The system removes hexavalent chromium through a reduction and precipitation process and cyanide through an ion exchange process. The plant is currently operating 24 hours per day, treating ground water at a rate of 80 gallons per minute. Ground water with typical chromium and cyanide concentrations of 100 micrograms per liter and 250 micrograms per liter, respectively, is being treated to meet cleanup criteria of 20 micrograms per liter for each contaminant. The effluent has consistently shown no detectable traces of chromium and only very low concentrations of cyanide (2 to 5 micrograms per liter). This interim remedial action will be integrated into the final remediation activities at the installation.

"The Army Environmental Program is an excellent opportunity to demonstrate Army commitment to the world community."

Gordon R. Sullivan
Chief of Staff of the Army

Cleanups at Rocky Mountain Arsenal, CO

Significant accomplishments were achieved in 1991 at Rocky Mountain Arsenal. During the year, numerous IRAs were initiated or completed. For example, construction of a CERCLA Wastewater Treatment Facility was initiated during 1991. The CERCLA facility consists of a custom wastewater treatment system and a multiple-bay decontamination system.

The Basin A Neck Intercept and Treatment System was completed in the Fall of 1990. This treatment system can treat up to 30 gallons of contaminated ground water per minute. During FY 1991, the Northwest Boundary System Slurry Wall was extended to the northeast, and the Hydrazine Blending and Storage Facility was demolished because asbestos was present. Construction also was started on the Basin F Incinerator. The incinerator will be mechanically complete by the winter of 1992. Finally, a slurry wall and cap were constructed around a former disposal trench area.

The progress in cleanup activities at Rocky Mountain Arsenal is illustrated by approximately 90 percent decrease in ground water contaminant levels. This decrease has resulted from ongoing treatment operations.

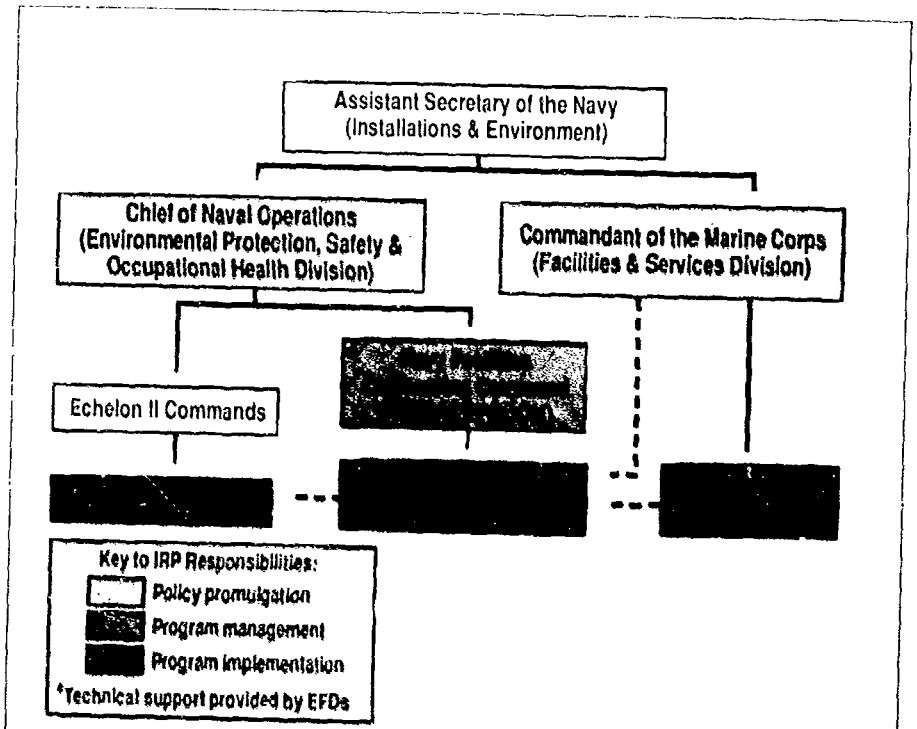
Ground Water Interim Action at Tobyhanna Army Depot, PA

In June 1991, the Army completed construction of a waterline extension from Tobyhanna Army Depot to 30 offpost residents affected by ground water contaminated with volatile organic compounds (VOCs). Approximately 8,000 feet of waterline was installed during the three-month effort. Waterline service will continue at no charge to the residents until the ground water is remediated to drinking water quality.

Principals involved in the extension of the Tobyhanna Army Depot water system prepare to turn on the valve symbolizing the start of water service.

Department of Navy IRP Progress

The most significant IRP growth among DoD components in FY 1991 occurred in the Department of Navy's program. The number of Navy and Marine Corps sites included in the IRP increased from 2,253 to 2,409. Progress in IRP activities has occurred mostly in RI/FS work which increased by 30 percent during FY 1991.



Department of Navy IRP Organization

The major Navy and Marine Corps accomplishments in FY 1991 include the initiation of new RI/FS work and continued progress in cleanup actions. Approximately 62 percent of the additional funding received in FY 1991 was invested in RI/FS activities, increasing the number of sites where RI/FS work was underway from 750 to 971. Other efforts were focused on completing IRAs/RAs at 29 sites. By the end of FY 1991, a total of 60 IRAs/RAs had been completed. PA completions at Department of Navy sites increased from 2,222 to 2,362 during FY 1991 and SI work was completed at 1,580 sites by the end of the fiscal year.

The Department of Navy signed ten IAGs covering NPL installations in FY 1991. This action brings the total number of Navy and Marine Corps NPL installations covered by IAGs to 18. RI/FS activities are underway or completed at all NPL facilities and removal actions and IRAs were completed or were ongoing at 22 of the 24 Department of Navy facilities final-listed or proposed for listing on the NPL.

The following are examples of significant Department of Navy IRP projects conducted in FY 1991. (Appendix B provides additional details for installations final-listed or proposed for listing on the NPL.)

I am committed to seeing that Navy commands at sea and ashore and around the globe continue these efforts, large and small, to preserve the environment for our own well-being and for future generations.

Admiral Frank B. Kelso, II
Chief of Naval Operations

Removal at MCCDC, Quantico, VA

Soil samples taken in 1988 at Marine Corps Combat Development Command (MCCDC), Quantico, Virginia, revealed PCB levels of up to 1,820 ppm. Based on the proximity of the contaminated sites to the Potomac River, MCCDC Quantico conducted a removal action to prevent contamination of the river by surface runoff.

In January 1991, the last shipment of approximately 3,881 tons of PCB contaminated soil was loaded into railcars and shipped to an EPA-approved hazardous waste landfill in Clive, Utah. The contaminated soil was removed from Sites 4 (Old Landfill) and 5 (Old Batch Plant) of the Marine Corps Combat Development Command in Quantico, Virginia.

Navy/State Agreement Signed at Naval Weapons Station, Seal Beach, CA

In September 1991, the Naval Weapons Station at Seal Beach, California signed a bilateral agreement with the State of California's EPA and the Santa Ana Regional Water Quality Control Board (RWQCB). The agreement allows the State to officially oversee the cleanup efforts under California law. It integrates the Navy's CERCLA response obligations with the Navy's RCRA corrective action obligations, State corrective/remedial action obligations, and obligations under other statutory requirements of the RWQCB. The signing of this agreement culminated over two years of negotiations. It is the first such agreement between a state and a Navy facility not on the NPL.

Lakehurst Naval Air Engineering Center, NJ

In 1991, the Navy and U.S. EPA signed interim RODs to remove fuels from ground water at four sites at the Naval Air Engineering Center, Lakehurst, New Jersey. Pump and treat systems are now operating at three sites and under construction at the fourth. Remediation contracts have been awarded or prepared for award for twelve other sites. In addition, over 100 cubic yards of PCB- and oil-contaminated soil was removed and replaced with clean fill by base personnel.

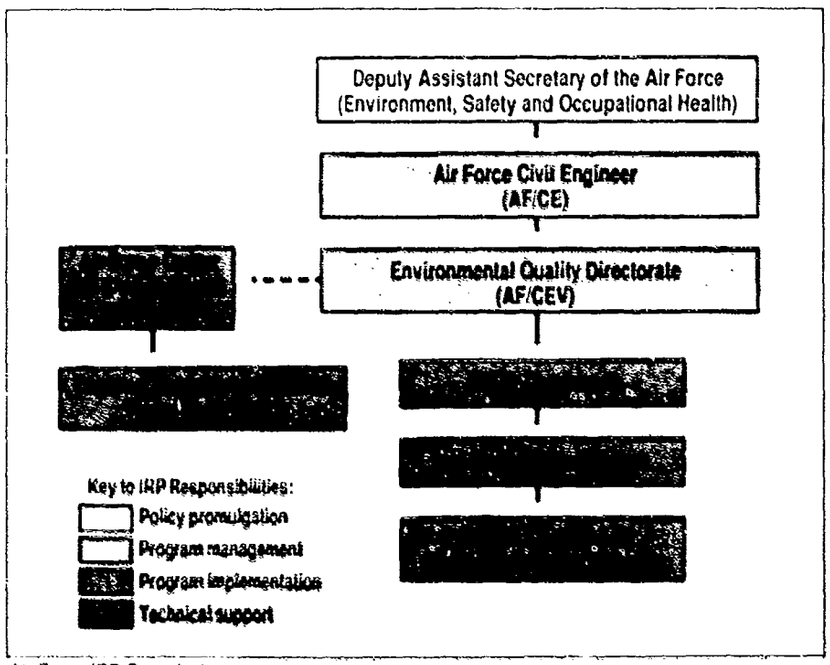
Cleanup at Pioneer Sand Company Superfund Site, FL

Construction for the cleanup work at the Pioneer Sand Company Superfund site in Pensacola, Florida was completed in 1991. The site, a former sand quarry, was used as an industrial waste disposal site by the Navy and Reichold Chemicals Co. during the 1970s. Wastes at the site include a significant quantity of auto shred material as well as metal sludges and organic liquids. The remedy selected for the site involves removal of water from a contaminated sludge pond followed by treatment of the water and solidification of the sludge. Elements of the cleanup include stabilizing approximately 7,500 cubic yards of sludge, constructing a 683-foot-long leachate collection trench, composite liner and grassy cover for the landfill, and the installation of ground water monitoring wells and a gas venting system.

A pump and treat system is used at Lakehurst Naval Air Engineering Center, New Jersey, for ground water remediation.

Air Force IRP Progress

An additional 16 Air Force installations were added to the IRP last year, bringing the total to 331. However, the number of sites at Air Force installations decreased slightly in FY 1991, to 4,354 sites, as a result of the review and consolidation of site counts. By the end of FY 1991, IRP activities were complete and no further remedial actions were planned at 834 Air Force sites.



Air Force IRP Organization

The Air Force's major accomplishments in FY 1991 included increasing the number of closed-out sites and registering significant progress in RI/FS and RD/RA work. In past years, limited funding has restricted the Air Force to addressing only contamination at NPL installations and a few non-NPL installations. The additional funding received in FY 1991 allowed the Air Force to expand the assessment of potential contamination to all Air Force installations.

The number of closed-out sites increased from 448 to 834 in FY 1991. The number of sites at which RI/FS is complete increased from 557 to 1,053 in FY 1991. By the end of the year, RD work had been performed at 230 sites while 150 RA activities had been completed at Air Force sites.

During FY 1991, the Air Force completed and signed IAGs for eight NPL installations. This brought the total number of Air Force NPL installations with signed IAGs to 27. RI/FS activities are underway or complete at all of these facilities. Removal actions and IRAs have occurred at 30 of the 31 Air Force NPL facilities.

The following are examples of significant Air Force IRP project activities conducted in FY 1991. (Appendix B provides additional details for installations on the NPL.)

Expedited Actions at Pease AFB, NH

At Pease AFB, New Hampshire, an NPL-listed installation included on the closure list, an accelerated program was undertaken to investigate the contamination around three existing buildings. Sources of contamination were removed, including a 15,000-gallon tank and two oil/water separators. In addition, all 36-inch drains in one building were pressure-flushed and sealed with sand and concrete. A total of 300 soil samples were taken and 45 ground water wells were drilled and

sampled to further characterize contamination at the site. A treatment system was installed with 100 well-points. This is a dual phase (vapor-liquid) system designed to treat TCE in both phases. All these actions, namely an RI and a treatability study, were initiated in April 1991 and are scheduled for completion in January 1992.

> ***"Despite steady improvements in environmental protection, the Air Force must do more, now. We must move past the study stage into the action phases–training, prevention, and cleanup.***
>
> **General Merrill A. McPeak**
> **USAF, Chief of Staff**

Response Actions at McClellan AFB, CA

The Air Force is undertaking several removal actions to control ground water and soil contamination at McClellan AFB. Three extraction wells are pumping ground water at a total rate of 270 gallons per minute. The water is filtered at an on-base treatment facility through activated carbon to remove volatile organic compounds. The filtered water is then discharged into the base's Industrial Wastewater Line for further treatment at the Industrial Wastewater Treatment Plant. During FY 1991, approximately 135 million gallons of ground water were treated. In addition, ground water continues to be pumped from a water supply well that services the base at a rate of 700 gallons per minute. The water is treated with activated carbon before distribution. Further, a total of 45 underground storage tanks, some of which were leaking, and the surrounding contaminated soils were removed and disposed of properly.

Panero Removal Action at March AFB, CA

The Panero aircraft fuel hydrant system was built in 1952 and had been the primary fueling system at March AFB. This extensive system consisted of thirty-four 50,000-gallon underground storage tanks, 10 control pits which governed 20 hydrant refueling pits, a vapor recovery unit with a 550-gallon underground concrete tank, a 25,000-gallon defueling tank, and associated piping, pumps and fuel/water separators.

Several removal action activities were conducted in FY 1991. The 36 tanks, three control pits and associated refueling hydrants, and the vapor recovery unit were removed and disposed of properly. The associated fuel distribution lines were emptied of fuel, filled with inert material and closed in place. Low temperature thermal oxidation was used to treat approximately 3,000 cubic yards of contaminated soil. This process is expected to treat the remaining 11,600 cubic yards.

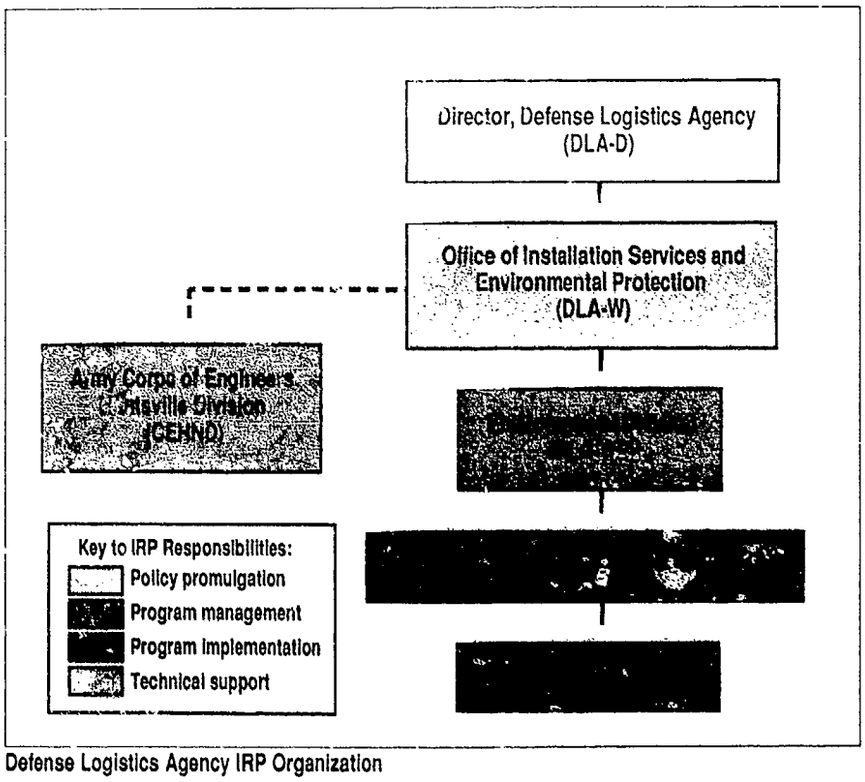
Cleanup Activities at Tinker AFB, OK

At Tinker AFB, the main engine repair facility (Building 3001) sits atop a major drinking-water aquifer for the area. Past industrial practices have contaminated zones of the aquifer with solvents and heavy metals. The remedial design of a ground water cleanup system to remove the contamination plume and prevent further migration of contaminants into ground water aquifers was completed in FY 1991. Removal actions conducted in FY 1991 included the recovery of 300 gallons of floating product from the perched aquifer and the removal of 24,592 gallons of residual heating oil from a 235,000-gallon underground storage tank.

Extensive tank excavation activities at March AFB were conducted for the Panero RA project.

Defense Logistics Agency IRP Progress

The Defense Logistics Agency (DLA) IRP continued to show steady progress in all areas in FY 1991. The number of installations and sites in DLA's program increased slightly in FY 1991, to 319 sites at 34 installations. IRP activities have been completed and no further remedial action is planned at 127 sites.


Director, Defense Logistics Agency (DLA-D)
Office of Installation Services and Environmental Protection (DLA-W)
Army Corps of Engineers, Huntsville Division (CEHND)
Key to IRP Responsibilities:
Policy promulgation
Program management
Program implementation
Technical support

Defense Logistics Agency IRP Organization

The increased funding received in FY 1991 by DLA was invested primarily in RI/FS and IRA work. As a result, the number of sites at which RI/FS work has been completed or is underway increased from 147 to 210 last year. This represents 98 percent of the total number of sites targeted for an RI/FS. All four DLA NPL sites had an IRA complete or underway by the end of FY 1991. Further, PA/SI work has been completed at all of DLA's 319 sites. RA completions at DLA sites increased from 3 to 16 in FY 1991.

In FY 1991, IAGs were signed covering two DLA installations, Defense General Supply Center Richmond and the Tracy Site, Defense Distribution Region West (DDRW). PA/SI work has been completed and RI/FS activities are underway at all four of the DLA installations final-listed on the NPL. In addition, removal actions and IRAs have occurred at all of DLA's NPL facilities.

In July of FY 1990, the Sharpe Army Depot (AD) was transferred from the Army to DLA, making Sharpe Site the fourth DLA installation listed on the NPL. The Sharpe Site (DDRW) is included in the DLA program counts presented in this report.

The following are examples of significant DLA IRP project activities conducted in FY 1991. (Appendix B provides additional details for installations on the NPL.)

Ground Water Cleanup Started at DFSP Charleston, SC

Studies conducted at Defense Fuel Support Point (DFSP) Charleston, South Carolina during 1987-88 discovered a plume of hydrocarbon contamination extending off of the site and under neighboring residential property. A ground water cleanup system was installed in FY 1991 that provides the best attainable cleanup levels, the least amount of disturbance to private property owners, and operates continuously with low maintenance. The system employs a combination of ground water withdrawal, treatment, biological remediation, and a monitoring program to determine cleanup effectiveness.

Transfer of Sharpe Site, DDRW, CA

The Sharpe Site, DDRW, was transferred from the Army to DLA during 1991. DLA continued to operate two ground water extraction and treatment plants at Sharpe in FY 1991. Treated water is sold to a nearby power plant for steam generation. The RI report for Sharpe was approved by all regulatory agencies in FY 1991. The FS and ROD for ground water have been placed on an accelerated schedule. Signature of the ground water ROD is expected in FY 1992. Treatability studies of in-situ volatilization (ISV) were conducted in FY 1991. ISV appears to be an economical way of removing large quantities of volatile contaminants from contaminated soils at Sharpe.

"I am committed to an aggressive environmental protection program throughout the agency."

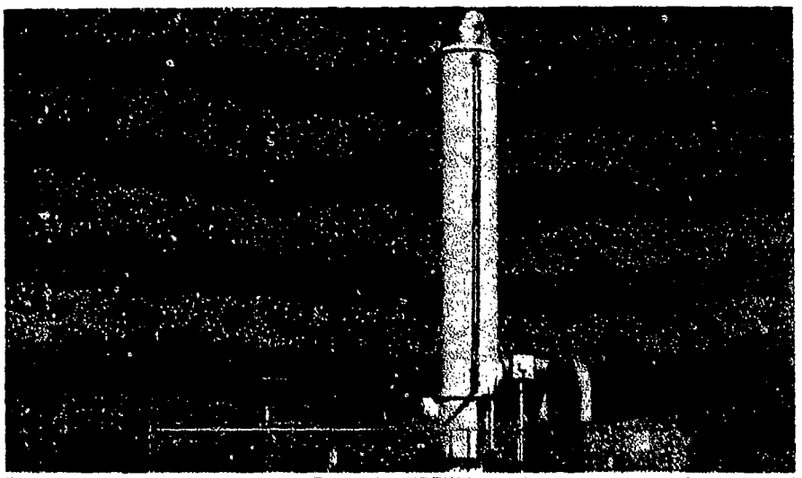
Lieutenant General Charles McCausland (USAF)
Director, Defense Logistics Agency

Ground Water Cleanup at Tracy Site, DDRW, CA

Remedial actions were conducted at the Tracy Site, DDRW, during the third quarter of FY 1991. An air stripping and carbon adsorption system to remove contaminants from the ground water was installed and began operation on October 4, 1991. The system is capable of treating 500 gallons per minute of water with a maximum influent contaminant level of 500 parts per billion (ppb) of trichloroethylene (TCE) and perchloroethylene (PCE) to an effluent level of 1 ppb TCE/PCE. The system captures all volatilized TCE/PCE, with a net result of zero contaminants released to the environment. The California Regional Water Quality Control Board and the California Department of Toxic Substances Control have praised DDRW Tracy for voluntarily expediting cleanup efforts at the site.

Installation of Site Remediation System at DFSP Newington, NH

The Defense Fuel Support Point (DFSP) in Newington, New Hampshire completed installation of a remediation system for soil and ground water contamination during the fall of 1991. Ground water is extracted and sent through an oil/water separator where free fuel is recovered. Ground water is then further treated with liquid phase activated carbon prior to discharge. Discharge water meets EPA drinking water standard. The soil vapors extracted through vacuum extraction wells will be discharged to the atmosphere, provided hydrocarbon vapor concentrations do not exceed 350 ppm at an air flow rate of 250 cfm.



The pump and treat water system at Tracy site, DDRW is used to remove contaminants from the ground water.

Other Hazardous Waste Program Progress

The Other Hazardous Waste (OHW) Program, the second element of DERP, examines current operations to find cost-effective approaches to DoD's waste management activities and to prevent pollution at the point of generation. Funds are invested to promote DoD's Total Quality Management of hazardous waste initiatives. Such efforts include research, development, and demonstration of pollution prevention and hazardous waste management technology. This work involves studies of UXO detection and range clearance methods; investigation of alternate products (substitution), revised specifications, and improved acquisition and operating practices; procurement of hazardous waste reduction equipment; information exchange; and other environmental restoration and pollution prevention activities.

In FY 1991, $56.4 million in DERP funds were invested for hazardous waste minimization projects. This increased funding has enabled the Department to make more progress towards meeting its goal of reducing hazardous waste disposal by 50 percent between 1987 and 1992. Between 1987 and 1990, the Department achieved a 40 percent reduction in hazardous waste disposal rates. This reduction resulted from a variety of projects conducted at almost every DoD installation. The Department is fully committed to reducing hazardous waste disposal and anticipates meeting the 50 percent reduction goal by the end of 1992.

The Department's waste minimization effort is expanding to meet the requirements of the Pollution Prevention Act of 1990. To make significant long-term changes in hazardous material usage, basic changes are being made at the beginning of our processes, the actual design of weapon systems.

We are incorporating environmental considerations, including life-cycle hazardous material management, into the weapon systems acquisition process by revising our acquisition policies. The use and management of hazardous materials now must be justified before a decision is made to proceed with any major weapon system.

Many military specifications and standards remain that unnecessarily require the use of hazardous materials. We have begun the process of reviewing these specifications and standards to eliminate or reduce the use of hazardous materials, thereby reducing the environmental requirements at the installation level. In 1992, more attention will be directed towards material substitution. Notable examples of OHW Program accomplishments follow.

Chlorinated Solvents Substitution

The Army is eliminating chlorinated solvents from many degreasing operations. At Stratford Army Engine Plant in Connecticut, vapor degreasers have been substituted with water jet spray booths. In this process, parts are cleaned with high-pressure washers and degreased with detergents. Water is recirculated in the washer system for further use and eventually treated at an industrial wastewater treatment plant. Further, under the Depot System Command's Centers for Technical Excellence (CTX) program, glove-box spray washers will replace solvent dip tanks used for various small parts. These techniques will provide significant benefits, including elimination of hazardous waste and reduction of health and environmental risks.

DoD Hawaii HAZMIN Project

The Hawaii Hazardous Waste Minimization (HAZMIN) Project is a joint DOD component initiative managed by the Navy. Under this project, efforts have been developed and implemented to reduce hazardous waste generation rates and off-island disposal needs for military operations in the State.

The initial phase of the project identified near-term recommendations at 21 Army, Navy, Air Force, Marine Corps, DLA, and National Guard installations. These near-term measures, defined as activities that could reasonably be implemented within one year, are being pursued and are expected to achieve savings of almost $500,000 per year when fully implemented. The second phase of the project identified long-term recommendations at 16 of the 21 installations. These long-term recommendations, defined as activities that require more than one year for implementation, are estimated to reduce DoD's waste generation rates by up to 29 percent once implemented. Avoided future disposal costs of over $6 million could result from implementation of these long-term recommendations.

Molten metal coating is used at DoD-Hawaii installations in painting operations to reduce hazardous waste.

Naval Supply Systems Role in HAZMIN

During 1991, the Naval Supply Systems Command implemented a comprehensive Hazardous Materials Control & Management (HMC&M) Program. This program will ensure effective control and management of hazardous material on a life-cycle basis to minimize hazardous waste generation throughout the Navy. The ultimate goal is to use the least possible amount of hazardous material (HM) to do the job and, for HMs that are still required, to control and manage them on a life-cycle basis to ensure the lowest cost is incurred to protect human health and the environment.

In addition, the Navy has established a Navy HMC&M Committee, and respective working groups to act as catalysts for HMC&M information exchange and planning among the Fleet and the Navy System Commands.

Cadmium Replacement

The DLA has conducted a study of specifications and standards that require cadmium for corrosion protection. The study was intended to evaluate alternative coatings and identify changes to the coating process to eliminate or reduce hazardous waste. DLA has identified six specifications and standards where less toxic substances have been substituted for cadmium. Remaining specifications and standards are being reviewed for substitution applicability. During 1991, specification QQ-P-416 Cadmium Plating (electrodeposited) was revised to include a list of suitable substitutes to cadmium plating. Revision of another five specifications for cadmium elimination also were initiated. Further, DLA began an engineering study to identify the extent and usage of cadmium plating on electrical connectors. The study involves surveying the connector industry to identify the particular products that use cadmium plating, and identify any available alternatives.

Review and Revision of Degreasing and Depreserving Solvent Specifications

During 1991, DLA conducted a study to identify alternatives for the Degreasing and Depreserving Solvent (MIL-C-11090E) used to remove corrosion resistant coatings and oils from parts. The Defense General Supply Center successfully field-tested a less flammable and less toxic substitute. The revised specification published in FY 1991, is expected to save $200,000 annually in procurement and disposal costs.

Robotic Water Jet Machine

In March 1991, The Oklahoma City Air Logistics Center installed a robotic, high pressure water jet cleaning system to remove old sealants and deposits from jet engines. The system removes sealants faster than alternative methods, uses less water than an ordinary garden hose, and produces no hazardous waste by eliminating the use of hazardous solvents.

The system blasts away sealant at 20,000 pounds per square inch, (psi) and uses only 20 gallons of water per minute. Washing water is filtered and reused. The water jet, which operates under a double-walled stainless steel cabinet, is fed by hoses with safety burst ratings of 30,000 psi and fittings with ratings of 45,000 psi.

Research, Development, and Demonstration

Traditional approaches to hazardous waste site cleanup may not be permanent or cost-effective solutions. These approaches can require large capital outlays and operating costs merely to move the problem from one location to another. DoD is working to identify and develop permanent cleanup technologies and efficient and cost-effective waste site investigation techniques. In addition, significant effort is being focused on the development and testing of methods to reduce the generation of hazardous wastes at DoD facilities. While these efforts require large financial commitments upfront, the potential future cost savings are enormous.

In FY 91, DoD invested approximately $5 million of Environmental Restoration Account funds in Research, Development, and Demonstration (RD&D) of cleanup technologies and hazardous waste minimization.

An Installation Restoration Technology Coordinating Group (IRTCG) consisting of representatives from each component coordinates RD&D efforts. The IRTCG encourages improved communication among the components to ensure the most effective possible use of limited RD&D funds. In addition, a DoD/EPA/DOE working group established in 1985 addresses the cost of hazardous waste cleanups, evaluates innovative technology needs, and develops a coordinated approach to these efforts.

The following examples of recent RD&D projects demonstrate the progress made by DoD and illustrate the potential benefits of well-directed research.

In-Situ Monitoring

The Terratrog instrument was developed for use in *in-situ* monitoring to detect contaminants present at hazardous waste sites. The instrument uses fluorescent light transmitted through a fiber-optic cable. Sensors placed at the end of cable can detect metals and trichloroethylene (TCE). The system was tested at Phoenix Military Reservation, Maryland and, in conjunction with the Ion Trap Mass Spectrometer, at DOE's Savannah River site. The Terratrog successfully detected low parts per million levels of TCE, with instrument readout times of less than two minutes.

Ordnance Remediation–White Rot Fungus Patent

A patent has been filed on behalf of the Naval Civil Engineering Laboratory for a bioremediation process that uses white rot fungus to biologically degrade trinitrotoluene (TNT) in liquid or solid waste to carbon dioxide. Bioremediation utilizing the fungus can result in 75–90% cost savings over incineration, the only other method of treatment now available. Studies have demonstrated that, over 90 days, approximately 85 percent of TNT in water at 100 mg/liter and in soil at 10,000 mg/Kg were degraded.

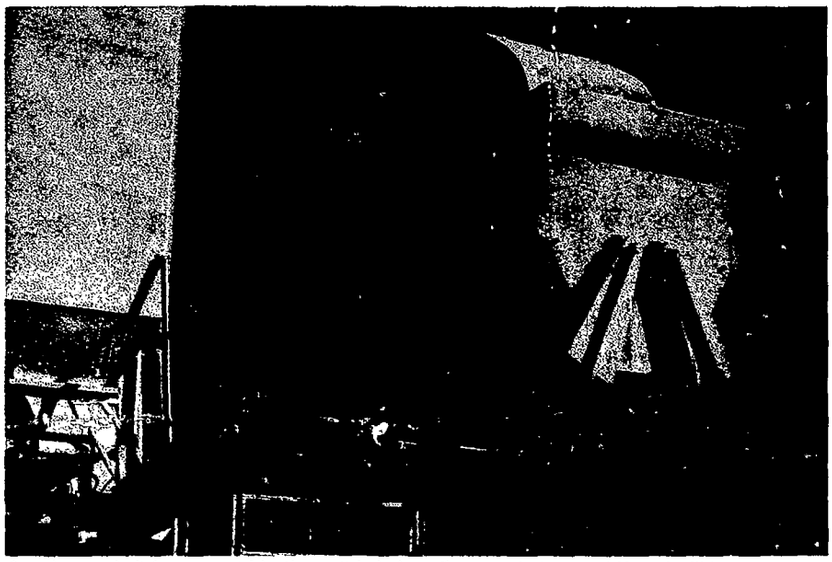
Ordnance waste disposal has been identified as a major waste category requiring RD&D for effective treatment and cleanup of contaminated Navy sites. The Navy has identified 26 ordnance waste disposal sites requiring cleanup.

Spent Sandblast Grit Recycling

The Naval Civil Engineering Laboratory (NCEL) has been working with the California Environmental Protection Agency (Cal–EPA) Alternative Technology Division to develop processes to use spent blasting grit in the production of asphalt pavement. This recycling technology is currently being pilot-tested at Naval Construction Battalion Center (NCBC), Port Hueneme; Naval Station Treasure Island, Hunters Point Annex; and Mare Island Naval Shipyard.

The spent blasting grit is mixed with aggregate and hot asphalt to form test pellets. Although the grits are often contaminated with lead, copper or tributyl tin up to hazardous levels, these contaminants are immobilized in the asphaltic mixture, and leaching does not occur. The product must meet strict California strength requirements and environmental criteria.

Currently, the Navy generates an estimated 10,000 tons of spent grits annually. Disposal costs for these grits range from $200/ton to $500/ton. Recycling the grits into asphaltic concrete reduces disposal costs by 90 percent. Anticipated annual cost savings are $1.8 million to $4.5 million.



Creating asphalt from spent blasting grit is being pilot tested at several Navy facilities.

Steam Injection/ Vapor Extraction Treatment

The Air Force is testing the Steam Injection and Vapor Extraction (SIVE) process to remove contaminants from soil and ground water at McClellan AFB. This innovative technology involves injecting steam into the soil and ground water to vaporize the volatile and semi-volatile organic contaminants, which are then extracted through vapor and condensate wells. The removed liquids and vapors are treated at the base's ground water treatment plant. The application of SIVE allows treatment of the contamination at its source and prevents further leaching of soil contaminants into the ground water.

Significant benefits are associated with the use of SIVE. Soil contamination can be treated in place without using traditionally expensive excavation/incineration treatment approaches. Soil treatment with SIVE is expected to cost approximately $125 per cubic yard, compared to $425 per cubic yard for on-site incineration. Unlike soil vapor extraction, the SIVE process removes both volatile and semi-volatile contaminants and can be applied below the water level to remove residual soil contamination.

Electrodialysis for Chromic Acid Recovery and Reuse

The Army has conducted a demonstration test at Corpus Christi Army Depot to evaluate the feasibility of using electrodialysis to extend the use of spent chromic acid solutions. Chromic acid solutions are commonly used for chromium electroplating and for the application or removal of chromate conversion coatings. Electrodialysis can reduce waste generation by allowing the reclamation and reuse of the chromic acid baths.

"Environmental stewardship is a high-tech business, and it requires great ingenuity and insight. Science and technology gives us tools for cleaning up our environment and keeping it clean. They help us identify our problems precisely, and develop efficient solutions."

President George Bush

Training of DoD Personnel in DERP Activities

The Defense Environmental Restoration Program requires a team effort to complete effectively its varied and complicated tasks. This is especially true in the IRP portion of the program. DoD has implemented training programs so that personnel can effectively manage various aspects of the cleanup process. During FY 1991, over 2,000 DoD personnel received DERP-related training. The following are examples of courses of instruction provided in FY 1991.

Risk/Health Assessment Training

The Air Force presented a course on EPA risk assessment methodology, Agency for Toxic Substance and Disease Registry (ATSDR) health assessments methodology, and risk communication for IRP personnel. The pilot course, held in September 1991, was attended by 60 command representatives. The course provides the basic knowledge of risk and health assessments required to manage and plan remedial responses and facilitate ATSDR health assessments conducted at IRP sites. The first of 12 course offerings throughout the country was held in November, 1991. Over 400 bioenvironmental engineers, occupational health physicians, military public health officials, lawyers, public affairs representatives and other specialists are expected to attend the courses during FY 1992.

DLA Professional Development Seminar

DLA's Directorate of Installation Services and Environmental Protection sponsored a three-day seminar in August 1991 in Richmond, Virginia. The seminar included several sessions on the IRP. Designed for key environmental restoration program managers at DLA primary level field activities, these working sessions focused on managing the Defense Environmental Restoration Account, the Defense Priority Model for ranking sites entering the cleanup phase, and status reports on the progress at DLA installations listed on the NPL. One particularly well-received session dealt with the progress and difficulties with DLA's Third-Party Site Program.

Navy Installation Restoration Program Health and Safety Courses

The Navy has developed a series of courses designed to meet the requirements of the Occupational Safety and Health Act (OSHA) for hazardous waste site workers and supervisors. The courses are tailored to the Navy's IRP. Remedial project managers, activity environmental coordinators, and others responsible for the progress of actions at DERP sites are intended participants. The courses include hands-on field experience where students learn, among other things, toxicology, hazard recognition and abatement, decontamination procedures, and the selection and use of personal protective equipment. Nearly 600 people attended the courses during FY 1991.

Air Force Environmental Leadership Course for Senior Leaders

During FY 1991, over 300 senior Air Force staff participated in the Environmental Leadership Course. This course provides senior leaders with the knowledge and skills to communicate and instill an environmental ethic throughout their commands. Further, it spells out national programs and policies, outlines the IRP, and describes budgets and processes to clean up IRP sites. The goal is top-to-bottom knowledge that will spark a commitment to action. The course is designed for senior leaders (e.g., general officers, installation commanders). Senior officials, such as the Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health) are the instructors. This course has been successfully given to several commands throughout the Air Force.

Safety and Health for Hazardous Waste Sites

In July 1991, DLA sponsored a special 40-hour CERCLA site safety and health course for 30 key environmental personnel. This course fulfills OSHA requirements and helps assure the safety and health of personnel at hazardous waste sites. The course specifically addressed CERCLA sites (NPL and non-NPL sites) and RCRA sites where investigations or cleanup operations are underway. Similar health and safety training is provided by all of the military services for their key personnel.

Health and Safety training provides our personnel with skills necessary to effectively manage restoration activities.

DPM Training

Almost 200 Army, Navy, Air Force and DLA staff learned to use DPM during FY 1991. This training qualified staff to score sites according to the risk posed to human health and the environment. Additional training was also provided in operating the automated version of the system for 71 personnel. Using DPM, the DoD components develop a risk-based rank ordering of all sites where RA work is scheduled. In the event of constrained funding, the DPM scores will prove to be a valuable tool in assuring that our worst sites are cleaned up first.

DERP Negotiation Training

In 1991, legal and environmental personnel from the Air Force, Army, and the Marines participated in the DERP Negotiation Training sponsored by DoD. The training, offered in four sessions of approximately 20 hours each, was designed for DoD personnel involved in negotiations between federal and state environmental officials for the cleanup of hazardous waste sites. Session activities included exercises and simulations of negotiation disputes typically encountered by DoD personnel. A total of 96 individuals participated in the training. The evaluations given by attendees regarding the sessions rated "very good" to "excellent."

Center for Environmental Restoration Education for Air Force Personnel

The Center for Environmental Restoration Education (CERE) was officially opened at the Air Force Institute of Technology (AFIT) School of Engineering and Services on January 1, 1991. AFIT, through the CERE program, is ensuring all Air Force personnel involved in the Installation Restoration Program (IRP) receive the vital technical and management education required to perform their critical duties. Potential students are not limited to civil engineers. Legal, public affairs, bioenvironmental engineers and contracting personnel are all eligible to attend. Since its opening, 134 Air Force personnel have taken advantage of CERE.

IRP Training of Air Force Personnel

The IRP course at AFIT has continued to provide valuable training in the IRP process. In FY 1991, this course provided an overview on Air Force policy and management guidance, hydrogeology, community and regulatory relationships, federal facility agreements and cleanup case histories to more than 200 Air Force personnel. This course is offered four times a year. Over 300 engineers, public affairs personnel, lawyers and bioenvironmental engineers will be trained in FY 1992.

Community Relations Training

During 1991, the Navy developed and sponsored the Installation Restoration Community and Media Relations training. The training was offered to restoration program managers, Public Affairs Officers, and individuals at installations who are involved with the community relations/public participation activities that occur between the end of the RI/FS and the beginning of the actual cleanup. The training focused on providing individuals with the skills they need to comply with the requirements under CERCLA Section 117 on public meeting and public comment. The course was offered on each coast and approximately 60 people were trained during FY 1991.

USACE DERP Training

The Directorate of Corps of Engineers Training Management located at the Huntsville Division of the USACE has provided DERP training to Army and Corps personnel involved with the Army IRP and the FUDS program. In FY 1991, the Corps trained over 1,000 individuals and held over 50 course sessions. The courses were designed primarily to meet the unique hazardous/toxic waste (HTW) training requirements encountered in DERP and to meet specific requirements mandated by Congress in SARA.

The courses were taught by experts in the environmental field. They included USACE Hazardous/Toxic Waste Overview, Safety and Health for Hazardous Waste Sites, and Implementation of HTW Environmental Laws and Regulations on USACE projects.

Training our personnel in proper methods for responding to chemical incidents helps to protect human health and the environment at and around Defense facilities.

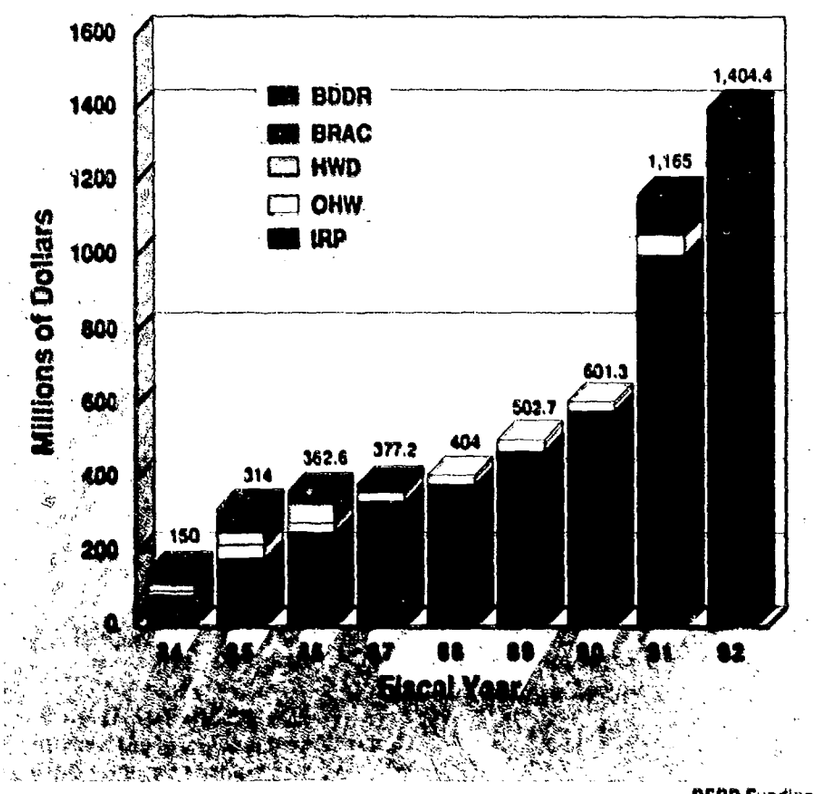
Program Funding

In FY 1984, Congress consolidated and expanded DoD programs to clean up hazardous waste in a separate appropriation entitled the Defense Environmental Restoration Account (DERA), under the Defense Appropriations Act. This has allowed the Department to accelerate its efforts and add research and other components to DERP. More than 87 percent of DERA funds have been allocated to the IRP since FY 1984. In FY 1991, 94 percent was invested in the IRP portion of the program. This heavy emphasis is expected to continue in FY 1992 because of the growth in these high-priority requirements. The FY 1992 DoD Authorization Act provides $1.4 billion for environmental restoration activities. This includes $220 million authorized under the Base Closure Account.

The Department has estimated the total cost of future DoD IRP activities at installations and formerly used properties at $24.5 billion beginning in FY 1991. This represents the estimated funding requirements in FY 1991 dollars needed to completely investigate and remediate all IRP sites now identified.

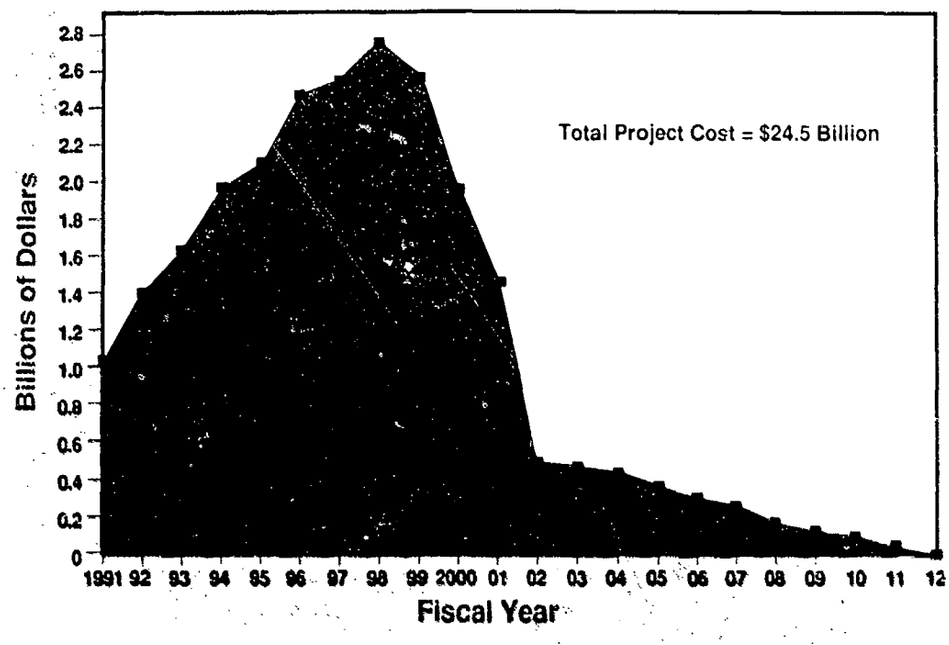
Most funding is for the more costly RD/RA cleanup phase of the program. It also includes costs for completion of all program phases, from PA through RA, as well as operation and maintenance (O&M) of remedial systems through the next 20 years. This estimate also includes projected outlays for third-party sites, RD&D, program administration and reimbursement to states under DSMOA. Our current total cost estimate does not include contingencies for such factors as changing regulations.

Estimated future IRP costs were developed from currently available information on site cleanup requirements. They include projections for sites where extensive data collection



DERP Funding

Projected IRP Rate of Expenditure



Note: These figures do not reflect budget estimates.

is still underway. Once this work is complete, a better definition of the sites actually requiring cleanup will be possible. Cleanup standards also remain uncertain. Some agreements for remedial action at NPL installations have not been reached with EPA and state agencies.

Of interest for long-term program planning is the rate of expenditures required to support the IRP. Therefore, once the cost estimate was determined, IRP costs were plotted as a function of time. The graph shown above is a hypothetical plot of the cost of the IRP over the next 20 years. The figures provided do not reflect budget estimates. Rather, they are estimates of resource requirements based on the general assumptions used in determining our future costs. These numbers are not derived with the level of detail necessary to form the overall outyear budgets.

The rate-of-expenditure curve was developed using the following assumptions:

- Future inflation was not considered;
- The duration of the remainder of the program is about 20 years (1991-2011);
- In any one year, funds are available to cover requirements;
- All PA/SIs are completed by 1992;
- All RI/FSs are underway by 1993;
- All RI/FSs are completed by 1996;
- All RD/RAs are underway by 2000;
- RDs and RAs each have a duration of one year and costs are incurred the year of execution.

The rate at which resources are expended over the 20 years is not linear because each site is already in the remedial pipeline and will continue to proceed toward closure. DoD's negotiations with regulatory agencies and the complexity of the site all contribute to the length of each cleanup phase. As an average, however, the PA and SI take one year each, the RI/FS takes four years, and the RD and RA take one year each. As a result, the curve has a maximum annual expenditure rate of $2.7 billion in FY 1998 and then decreases.

DoD will review the total program cost estimate periodically as the program matures and more information becomes available.

Appendix A
Information Requested by the Superfund Amendments and Reauthorization Act

This Appendix to the Annual Report provides information requested in Section 120(e)(5) of the Superfund Amendments and Reauthorization Act of 1986 (SARA), which applies to all Federal Facilities, and Section 211 of SARA (codified at 10 USC 2706), which pertains to the Defense Environmental Restoration Program.

Federal Facilities Reporting Requirements

Section 120(e)(5) of the SARA legislation specifies that each Federal department or agency shall annually report on the following items:

- A report on the progress in reaching interagency agreements.
- The specific cost estimates and budgetary proposals involved in each interagency agreement.
- A brief summary of the public comments regarding each proposed interagency agreement.
- A description of the instances in which no agreement was reached.
- A report on progress in conducting investigations and studies under Paragraph (1). [Paragraph (1) discusses the timing of RI/FS work at NPL sites].
- A report on progress in conducting remedial actions.
- A report on progress in conducting remedial actions at facilities which are not listed on the National Priorities List.

In addition, SARA specifies "With respect to instances in which no agreement was reached within the required time period, the department, agency, or instrumentality filing the report under this paragraph shall include in such report an explanation of the reasons why no agreement was reached. The annual report required by this paragraph shall also contain a detailed description on a State-by-State basis of the status of each facility subject to this section, including a description of the hazard presented by each facility, plans and schedules for initiating and completing response action, enforcement status (where appropriate), and an explanation of any postponements or failure to complete response action. Such reports shall also be submitted to the affected States."

Appendix B contains a description of each installation final-listed or proposed for listing on the NPL. Each description summarizes the background of the installation, including the types of environmental hazards present, the status of IAG negotiations, the status of IRP response actions, and schedules for initiating and completing those response actions. The information in Appendix B addresses the requirements of the preceding paragraph. Appendix E describes formerly used defense sites (FUDS) that are listed and proposed for listing on the NPL. Appendix B, Table B-1, catalogs DoD facilities that are final-listed and proposed for listing on the NPL and

Appendix E, Table E-1, catalogs FUDS that are final-listed on the NPL. The following paragraphs provide detailed responses to the SARA information requirements.

Progress in Reaching Interagency Agreements

During FY 1991, efforts to complete IAGs in compliance with SARA, Section 120 were accelerated through diligent work by the components. These IAGs continue to receive a high priority because they establish comprehensive installation-specific arrangements for proceeding with DoD's waste cleanup activities. DoD's goal is to have an agreement in place for all installations final-listed or proposed for listing on the NPL. Extensive field negotiations took place in FY 1991 with EPA and state authorities. As a result, a firm foundation for the agreement process has been built allowing DoD components to enter into consistent, workable agreements nationwide.

The signing of IAGs for 26 installations listed on the NPL in FY 1991 brought the total number of signed IAGs to 77. The installations with finalized agreements are shown in Table A-1. West Virginia Ordnance Works and Weldon Spring Former Ordnance Works also are included on the table because they have been funded as active Army installations. The large increase in signed agreements can be attributed to the extensive model language agreement and guidance developed in FY 1988, coupled with an all-out effort by the components to negotiate agreements. In FY 1991, the DoD components continued to hold workshops for their field personnel on the IAG model language and other aspects of negotiating IAGs.

Interagency Agreement Cost Estimates and Budgetary Proposals

DERP funding is discussed in the body of this report. The estimate for total program funding is based on existing budget documentation, including program cost data from the individual DoD component IRPs, and consideration of existing Superfund cost data. Table A-1 lists the installations with signed IAGs along with the estimated expenditures to-date and the estimated additional cost to implement each IAG. Total IRP costs associated with signed IAGs is $7.94 billion. These costs include past IRP costs along with future budgetary estimates for continued investigation and cleanup of the sites at installations where an IAG has been finalized.

Additional details of past expenditures at all DoD NPL installations are shown in Appendix B, Table B-1. That table includes additional funding data for IRAs, RAs, and RI/FSs.

Public Comments Regarding Proposed Interagency Agreements

As of September 30, 1991, public comments had been received on two of the 26 IAGs completed in FY 1991. These comments are summarized below.

Fort Devens, Massachusetts

Comments were received from the Massachusetts Department of Environmental Protection concerned the State's involvement in schedules, ROD selection, RCRA/CERCLA integration, DPM and funding of work, and site definition. As a result of these comments, nine revisions were made to the IAG.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1991

Location	Through FY 1991 $(K)	Estimated Additional Cost to Implement IAG $(K)
ARMY		
Aberdeen PG, MD (2)*	42,555	715,334
Alabama AAP, AL**	19,387	14,278
Anniston AD, AL	12,376	20,550
ARDEC (Picatinny Arsenal), NJ	18,413	59,341
Cornhusker AAP, NE	16,430	38,795
Fort Devens, MA	5,283	33,079
Fort Devens, Sudbury Annex, MA	3,759	6,290
Fort Dix, NJ	3,774	26,700
Fort Lewis, WA (2)*	11,174	58,990
Fort Ord, CA	14,121	28,262
Fort Riley, KS	4,102	19,020
Iowa AAP, IA	6,840	17,950
Joliet AAP, IL (2)*	11,630	29,415
Lake City AAP, MO	27,664	26,712
Letterkenney AD, PA (2)*	16,902	47,355
Lone Star AAP, TX	4,394	10,253
Louisiana AAP, LA	38,190	43,486
Milan AAP, TN	6,870	68,749
Riverbank AAP, CA	10,766	24,139
Rocky Mountain Arsenal, CO	414,685	1,637,148
Sacramento AD, CA	25,494	49,925
Savanna ADA, IL	13,513	24,710
Schofield Barracks, HI	1,005	4,600
Tobyhanna AD, PA	4,994	37,152
Tooele AD, UT	24,260	42,206
Twin Cities AAP, MN	33,275	66,728
Umatilla AD, OR	14,054	24,695
Weldon Spring Former Army Ordnance Works, MO**	26,182	173,808

*Both NPL listings for this installation are covered under one IAG.

**The dollars listed include money spent at Weldon Spring Quarry/Plant Pits (DOE/Army), a third party site.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1991

Location	Through FY 1991 $(K)	Estimated Additional Cost to Implement IAG $(K)
ARMY (Continued)		
West Virginia Ordnance, WV***	17,621	7,141
Army Total	**849,753**	**3,356,211**
DEPARTMENT OF NAVY		
Bangor NSB, WA (2)*	14,860	30,000
Barstow MCLB, CA	14,150	184,000
Brunswick NAS, ME	3,790	10,000
Camp Lejeune MCB, NC	5,870	50,300
Camp Pendleton MCB, CA	6,670	208,000
Cecil Field NAS, FL	2,760	42,700
El Toro MCAS, CA	2,880	329,000
Jacksonville NAS, FL	3,960	61,500
MCLB Albany, GA	2,530	64,000
Moffett NAS, CA	33,210	54,900
NADC Warminister, PA	940	4,400
NAEC Lakehurst, NJ	10,400	13,000
NAS Whidbey Island, WA (2)	14,840	60,000
NIROP Fridley, MN	6,070	8,500
NUWES Keyport, WA	8,830	20,000
Naval Weapons Station Earle, Site A, NJ	1,820	31,000
Pensacola NAS, FL	10,150	63,900
Treasure Island NS – Hunters Point, CA	31,800	84,300
Department of Navy Total	**175,530**	**1,319,500**
AIR FORCE		
AFP #4 (General Dynamics), TX	14,700	32,370
Castle AFB, CA	29,594	86,464
Dover AFB, DE	8,967	20,910
Edwards AFB, CA	41,000	49,500
Elelson AFB, AK	16,500	10,000
Fairchild AFB (4 Waste Areas), WA	19,976	59,100

***A former site, not listed as a federal facility, but funded as a federal facility.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1991

Location	Through FY 1991 $(K)	Estimated Additional Cost to Implement IAG $(K)
AIR FORCE (Continued)		
F.E. Warren AFB, WY	11,278	55,000
George AFB, CA	13,237	60,000
Griffiss AFB, NY	37,078	37,600
Hill AFB, UT	22,627	400,000
Homestead AFB, FL	4,650	16,000
Loring AFB, ME	41,951	282,552
Luke AFB, AZ	9,000	1,500
March AFB, CA	26,158	120,000
Mather AFB, CA	33,860	143,890
McChord AFB, WA (2)*	15,417	21,100
McClellan AFB, CA	72,783	1,580,000
Norton AFB, CA	18,600	64,400
Otis ANGB, MA	29,000	96,000
Pease AFB, NH	35,832	90,800
Plattsburgh AFB, NY	20,828	66,000
Robins AFB (Landfill #4/Sludge Lagoon), GA	18,900	25,130
Tinker AFB (Soldier Creek/Building 3001), OK	43,700	39,500
Travis AFB, CA	10,190	38,000
Twin Cities AFRB (Small Arms Range Landfill), MN	2,900	2,500
Williams AFB, AZ	11,600	35,834
Wright-Patterson AFB, OH	68,896	395,982
Air Force Total	**679,222**	**1,452,285**
DEFENSE LOGISTICS AGENCY		
Defense General Supply Center Richmond, VA	6,426	8,444
Ogden Defense Depot, UT	7,322	26,268
Sharpe Site, DDRW, CA	14,372	8,201
Tracy Site, DDRW, CA	9,510	29,406
DLA Total	**37,630**	**72,319**
DoD TOTAL	**1,742,135**	**6,200,315**

El Toro Marine Corps Air Station, Santa Ana, California

Comments were received from the City of Irvine concerning the pre-ROD IAG between the Department of Navy, EPA, and the State of California. The City expressed concern that mitigative action be taken as soon as possible to protect ground water resources and the drinking water supply of Santa Ana and prevent further migration of the TCE contamination. The City also requested reimbursement for project construction and operations costs incurred by the City and the Orange County Water District. In addition, since the City of Irvine and the Orange County Water District were not parties to the pre-ROD IAG, a request for a separate agreement between the responsible party, the District, and the City was made.

Instances Where No Agreement Was Reached

There are no instances where DoD has failed to reach an agreement within the required time period.

Remedial Investigation/Feasibility Study (RI/FS) Progress

Section 120(e)(1) of SARA specifies that RI/FS work must be initiated at sites within six months of listing on the NPL. RI/FS work has been started at all 90 DoD installations final-listed or proposed for listing on the NPL. RI/FS start dates are shown in the Installation Narratives in Appendix B.

Remedial Action Progress

Section 120(e)(2) of SARA requires that on-site remedial action must be initiated within 15 months of completion of an RI/FS and the issuance of a ROD at an NPL facility. At the end of FY 1991, RD/RA efforts were underway at all four DoD NPL installations for which RODs had been completed 15 months earlier or more. These were: West Virginia Ordnance Works, Tinker AFB, Ogden Defense Depot, and Fort Lewis. In FY 1991, final RODs were signed at eight installations including two Army, two Navy, and four Air Force installations. DoD anticipates beginning final RA activities at all eight of these installations within the required time period.

During FY 1991, response actions have been undertaken at 86 DoD installations with sites on the NPL. This work involves several types of Removal Actions and/or IRAs. These actions are summarized in Table A-2. Additional information on RD/RA initiatives at DoD NPL installations is provided in the narratives in Appendix B.

Remedial Actions at Non-NPL Facilities

Remedial actions have been initiated at 1,070 DoD sites (including sites at NPL installations). These include Removal Actions, IRAs and long-term monitoring. Of these, 372 had been completed by the end of FY 1991.

Table A-2
Summary of NPL Installation Activities

Type of Activity	Number of Activities
Alternate Water Supply/Treatment	33
Incineration	7
Site Treatment/Remediation	101
Decontamination	23
Waste Removal	121
Ground Water Treatment	63
Long-term Monitoring	52
TOTAL	400

Note: Some installations have more than one type of action underway.

Defense Environmental Restoration Program Reporting Requirements

Section 211 of SARA (10 USC 2706) specifies that the Annual Report to Congress shall include:

"(1) A statement for each installation under the jurisdiction of the Secretary of the number of individual facilities at which a hazardous substance has been identified."

"(2) The status of response actions contemplated or undertaken at each such facility."

"(3) The specific cost estimates and budgetary proposals involving response actions contemplated or undertaken at each such facility."

"(4) A report on progress on conducting response actions at facilities other than facilities on the National Priorities List."

Appendix C summarizes the information requested in items 1, 2, and 4 above. It denotes the number of sites undergoing each step of the IRP at any one installation. The response to item 3 above is found in the Program Funding section of this report.

Appendix C, Table C-1 provides a detailed listing of IRP status for each installation in the program. For each IRP phase listed in Table C-2, four status categories exist: "C," "U," "F," or "CO." Category "C" represents the total number of sites for which that particular study or action has been completed. The "U" category denotes the number of sites having that particular study or action underway. The "F" category shows the number of sites scheduled to have that study/action performed in the future. "CO" indicates that the site is closed-out because no further action was recommended for the site at the completion of the particular IRP phase.

Facilities Having Identified Hazardous Substances

The universe of sites at DoD installations in the IRP is summarized on page 7 of this report and explained further in Appendix C. Referring to these tables, a PA is a Preliminary Assessment of an installation to determine if a site may pose hazards to public health or the environment, and may require further study. An SI is a Site Inspection of an installation, which follows a PA and consists of limited sampling and analysis to determine the existence of actual site contamination. The information collected in the SI is used to score the site with the HRS to determine whether a site should be placed on the NPL. The RI/FS involves quantitative sampling and analysis to identify those sites that are contaminated, the types of contaminants present and their levels, and whether the contamination is causing or contributing to any ground or surface water pollution. RD is an engineering phase following the ROD in which technical drawings and specifications are developed for the subsequent remedial action at a site. RA is the actual construction or implementation phase that follows the design of the selected cleanup alternative for a site.

Confirmation about which of the 17,665 potential sites are actually contaminated and are presenting a health or environmental risk requires completion of an RI. Because RIs are still underway at many sites, the absolute number of sites with hazardous substances cannot be determined. A minimum can be calculated by assuming that all sites with RD/RA scheduled, underway at this time or completed have been confirmed as having identified hazardous waste that may present a risk. The present estimate of confirmed hazardous waste sites in DoD is 4,012, the sum of RA work completed, underway, or planned for the future as provided on page 7.

Status of Current or Contemplated/Undertaken Response Actions

The number of response actions undertaken at any one installation is indicated by the sum of the numbers in the "C" and "U" categories of each response action type listed in the table in Appendix C. Similarly, the "F" category under each type of response action indicates the number of contemplated (future) response actions for each installation.

Table C-2 shows that 372 cleanups (i.e., removals, interim responses, and remedial actions) have been completed. This includes 146 Army, 60 Navy, 150 Air Force, and 16 DLA actions at IRP sites. In addition, there are 698 site actions underway with 2,942 scheduled for the future.

Response Action Cost Estimates and Budgetary Proposals

In FY 1991, the Congress appropriated $1.165 million for the DERP, of which $1.004 million was spent on the IRP. These funds were used primarily to expand and accelerate studies and remedial actions at more than 17,600 individual sites. The Program Funding section of this report provides additional funding information.

Response Action Progress at Non-NPL Facilities

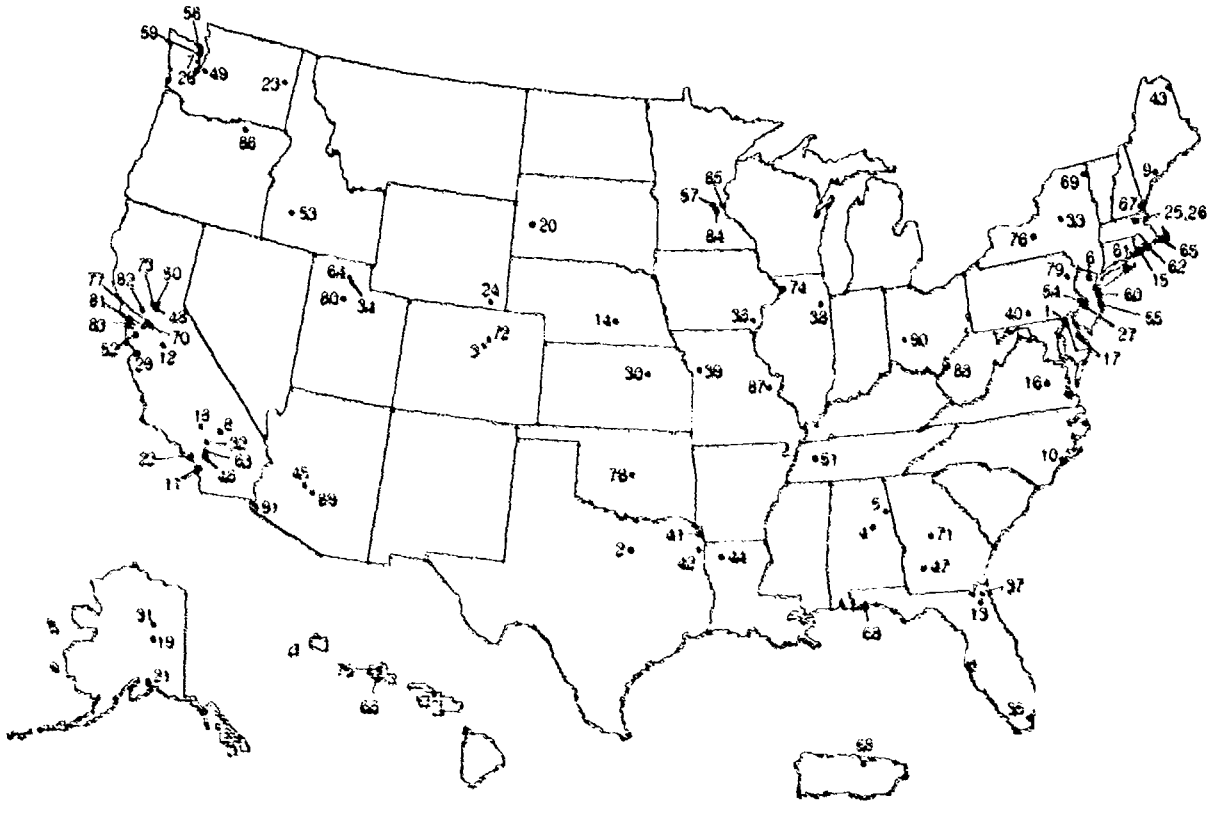
DoD has continued to make progress during FY 1991 in investigating all sites or facilities on DoD installations potentially contaminated with hazardous substances and cleaning up those sites that pose a threat to human health and the environment, regardless of whether they are on the NPL. A total of 17,660 sites on 1,877 military installations are currently included in the IRP. Of the total number of sites, 3,738 are sites associated with facilities listed on the NPL. Facilities not listed on the NPL have a total of 13,922 sites in various stages of the IRP. RAs are ongoing at 240 sites on non-NPL facilities.

Appendix B provides data regarding IRP response actions at DoD facilities on the NPL. The listing in Appendix C, in addition to providing additional information on NPL sites, provides the status of work at non-NPL facilities.

Appendix B
DoD NPL Installations

This Appendix to the Annual Report summarizes information for each DoD installation listed and proposed for listing on the NPL as of the end of FY 1991. Table B-1 provides key data for the facilities listed on the NPL. Narrative summaries for each DoD installation listed on the NPL begins on page B-8.

As of September 30, 1991, 89 DoD installations were listed and one (Pearl Harbor Naval Complex) proposed for listing on the NPL. Two separate areas of seven of these 89 installations are listed twice on the NPL, bringing the total number of DoD NPL listings to 96. In addition, West Virginia Ordnance Works, a former DoD-owned facility, has been included in this Appendix because the Army is remediating the facility as if it were an active Army site.



Location of DoD Installations on the NPL
(Narratives beginning on page B-8 are keyed to map numbers)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
ARMY							
Aberdeen PG (Edgewood Area)	MD	53.57	91	15,662	18,015	FIN	90
Aberdeen PG (Michaelsville Landfill)	MD	31.09	—	0	893	FIN	90
Alabama AAP	AL	36.83	91	8,443	10,944	FIN	90
Anniston AD (Southeast Industrial Area)	AL	51.91	91	1,201	8,671	FIN	90
ARDEC (Picatinny Arsenal)	NJ	42.92	91	6,385	7,551	FIN	91
Cornhusker AAP	NE	51.13	88	10,865	5,565	FIN	90
Fort Devens	MA	42.24	—	0	5,283	FIN	91
Fort Devens Sudbury Training Annex	MA	35.57	—	0	3,759	FIN	91
Fort Dix (Landfill Site)	NJ	37.40	91	1,497	2,277	FIN	91
Fort Lewis (Landfill No. 5)	WA	33.79	—	0	4,024	FIN	90
Fort Lewis Logistics Center	WA	35.48	91	2,188	1,190	FIN	90
Fort Ord	CA	42.24	90	1,223	8,924	FIN	90
Fort Riley	KS	33.79	90	775	3,327	FIN	90
Fort Wainwright	AK	42.40	91	550	6,317	IN	92(e)
Iowa AAP	IA	29.73	90	1,934	4,906	FIN	90
Joliet AAP (LAP Area)	IL	35.23	—	0	3,423	FIN	89
Joliet AAP (Mig Area)	IL	32.08	85	1,486	1,503	FIN	89
Lake City AAP (Northwest Lagoon)	MO	33.62	90	12,628	14,734	FIN	89
Letterkenny AD (PDO Area)	PA	37.51	91	340	2,789	FIN	89

FIN = Finalized (signed) • IN = Initialed • NYI = Not yet initialed • (e) = Expected

(Continued)

Table B-1

DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
ARMY (Continued)							
Letterkenny AD (Southeast Area)	PA	34.21	91	1,953	10,497	FIN	89
Lone Star AAP	TX	31.85	91	440	3,954	FIN	90
Longhorn AAP	TX	39.83	—	0	1,578	IN	92 (e)
Louisiana AAP	LA	30.26	90	33,924	4,266	FIN	89
Milan AAP	TN	58.15	84	966	5,904	FIN	89
Riverbank AAP	CA	63.94	91	4,702	6,063	FIN	90
Rocky Mountain Arsenal	CO	58.15	91	273,111	92,832	FIN	89
Sacramento AAP	CA	44.46	91	17,358	8,136	FIN	88
Savanna ADA	IL	42.20	91	6,609	4,867	FIN	89
Schofield Barracks	HI	28.90	—	0	1,005	FIN	91
Seneca AD	NY	35.52	89	957	2,585	IN	92(e)
Tobyhanna AD	PA	37.93	91	1,625	3,293	FIN	90
Tooele AD (North Area)	UT	53.95	91	8,431	15,829	FIN	91
Twin Cities AAP*	MN	59.16	91	11,312	21,963	FIN	87
Umatilla DA (Lagoons)	OR	31.31	90	0	13,036	FIN	89
Weldon Spring**	MO	58.60	90	15,210	10,982	FIN	90
West VA Ordnance Works***	WV	35.72	91	15,883	1,738	FIN	89

*Listed as New Brighton/Arden Hills, not as a federal facility.
**Army funding of the chemical plant and active portion of the Ordnance Works.
***A former site, not listed as a federal facility, but funded by the Army.

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
DEPARTMENT OF NAVY							
Bangor NSB	WA	55.91	91	240	14,420	FIN	90
Bangor Ordnance Disposal	WA	30.42	91	included above		FIN	90
Barstow MCLB	CA	37.93	91	1,400	10,680	FIN	91
Brunswick NAS	ME	43.38	—	0	3,520	FIN	89
Camp Lejeune MCB	NC	33.13	90	1,390	2,590	FIN	91
Camp Pendleton MCB	CA	33.79	86	7	740	FIN	91
Cecil Field NAS	FL	31.99	—	—	1,660	FIN	91
Davisville Naval CB Center	RI	34.52	91	340	1,310	IN	92(e)
El Toro MCAS	CA	40.83	—	—	1,510	FIN	91
Jacksonville NAS	FL	32.08	85	1,890	1,010	FIN	91
MCLB Albany	GA	44.65	91	1,290	320	FIN	91
Moffett NAS	CA	24.49	90	2,730	30,070	FIN	89
NADC Warminster (8 Waste Areas)	PA	57.93	90	70	800	FIN	90
NAEC Lakehurst	NJ	50.53	91	4,590	4,990	FIN	89
NAS Whidbey Island (Ault Field)	WA	47.58	91	180	11,610	FIN	90
NAS Whidbey Island (Seaplane Base)	WA	39.64	91	included above		FIN	90
NIROP Fridley	MN	30.83	91	3,520	2,550	FIN	91

(Continued)

Table B-1

DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action: Year (Latest)	Removal Action/Interim Remedial Action: $(K) Thru FY 91	RI/FS: $(K) Thru FY 91	IAG: Status	IAG: Signing Year
DEPARTMENT OF NAVY (Continued)							
NSG Sabana Seca	PR	34.28	88	10	1,120	IN	92(e)
NUWES (4 Waste Areas) Keyport	WA	32.61	—	—	8,240	FIN	90
Naval Weapons Station Earle (Site A)	NJ	37.21	—	50	1,180	FIN	91
New London SB	CT	36.53	91	530	2,000	IN	92 (e)
Newport NETC	RI	32.25	91	20	2,100	IN	92 (e)
Pearl Harbor Naval Complex	HI	70.82	91	5,600	1,740	NYI	—
Pensacola NAS	FL	42.40	91	3,540	4,340	FIN	91
Treasure Island NS - Hunters Point Annex	CA	48.77	90	3,140	27,720	FIN	90
Yuma MCAS	AZ	32.24	—	—	340	IN	92 (e)
AIR FORCE							
AFP #4 (General Dynamics)	TX	39.92	86	4,630	7,315	FIN	90
AFP PJKS	CO	42.93	91	5,645	1,731	IN	92(e)
Castle AFB	CA	37.93	91	11,777	16,186	FIN	89
Dover AFB	DE	35.89	88	760	6,425	FIN	89
Edwards AFB	CA	33.62	91	6,778	26,689	FIN	90
Eielson AFB	AK	48.14	91	4,334	9,643	FIN	91
Ellsworth AFB	SD	33.62	91	16,890	4,655	IN	92(e)
Elmendorf AFB	AK	45.91	91	6,843	7,622	IN	92(e)

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
AIR FORCE (Continued)							
Fairchild AFB (4 Waste Areas)	WA	31.98	90	7,439	11,777	FIN	90
F.E. Warren AFB	WY	39.23	90	7,180	3,483	FIN	91
George AFB	CA	33.62	91	8,203	4,167	FIN	90
Griffiss AFB	NY	34.20	91	10,478	26,097	FIN	90
Hill AFB	UT	49.94	91	4,404	16,480	FIN	91
Homestead AFB	FL	42.40	90	1,003	3,456	FIN	91
Loring AFB	ME	34.49	91	25,032	16,491	FIN	91
Luke AFB	AZ	37.93	90	1,617	5,716	FIN	90
March AFB	CA	31.94	91	16,687	8,826	FIN	90
Mather AFB	CA	28.90	91	4,980	28,416	FIN	89
McChord AFB (Wash Rack/ Treatment Area)	WA	42.24	88	2,789	11,524	FIN	89
McChord (American Lake Garden Tract)	WA	31.94	88	Included above		FIN	90
McClellan AFB	CA	57.93	91	30,328	41,018	FIN	90
Mountain Home AFB	ID	57.80	88	200	2,866	IN	92(e)
Norton AFB	CA	39.65	90	4,284	12,261	FIN	89
Otis ANG Base/ Camp Edwards	MA	45.92	91	3,424	25,449	FIN	91
Pease AFB	NH	39.42	91	10,162	24,815	FIN	90
Plattsburgh AFB	NY	30.34	91	10,693	9,573	FIN	91

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action: Year (Latest)	Removal Action/Interim Remedial Action: $(K) Thru FY 91	RI/FS: $(K) Thru FY 91	IAG: Status	IAG: Signing Year
AIR FORCE (Continued)							
Robins AFB (Landfill #4/Sludge Lagoon)	GA	51.66	91	4,435	10,918	FIN	89
Tinker AFB (Soldier Creek/Building 3001)	OK	42.24	91	23,894	16,654	FIN	88
Travis AFB	CA	29.49	91	1,860	7,270	FIN	90
Twin Cities AFRB (Small Arms Range Landfill)	MN	33.62	91	437	1,531	FIN	89
Williams AFB	AZ	37.93	91	6,132	4,078	FIN	90
Wright-Patterson AFB	OH	57.85	91	8,543	56,110	FIN	91
DEFENSE LOGISTICS AGENCY							
Defense General Supply Center Richmond	VA	33.85	85	150	5,524	FIN	90
Ogden Defense Depot	UT	45.10	88	646	4,028	FIN	89
Sharpe Site, DDRW	CA	43.24	91	4,074	10,298	FIN	89
Tracy Site, DDRW	CA	37.16	91	2,708	6,808	FIN	91

Aberdeen Proving Ground (1)
(Edgewood Area and Michaelsville Landfill)
Edgewood and Aberdeen, Maryland

Service:	Army
Size:	72,518 Acres
HRS Score:	53.57 (Edgewood Area) 31.09 (Aberdeen Area)
Base Mission:	Develop and test equipment; Provide training
IAG Status:	Pre-ROD IAG signed March 1990
Action Dates:	PA/SI completed 1976; Placed on NPL 1990
Contaminants:	VOCs, arsenic, phosphates, napalm, UXO, nitrates, chemical agents
Funding to Date:	$42.56 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI identified eight areas of contamination and recommended three areas for preliminary survey and two for further monitoring. Large areas contaminated or potentially contaminated with UXO, chemical munitions, and manufacturing wastes were identified. RCRA Facility Assessments (RFAs) completed under the RCRA Corrective Actions Permits in 1990 refined PA/SI work and identified 319 Solid Waste Management Units (SWMUs). These SWMUs were combined into 13 study areas under an IAG that was signed by EPA on March 10, 1990. Substantial VOC contamination of surface and ground water was detected. As a result, four drinking water wells were removed from service. Contaminant migration through surface waters may occur at five sites.

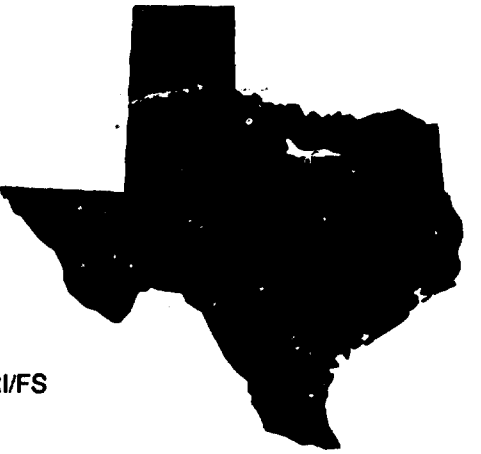
Remedial Investigation/ Feasibility Study (RI/FS)

Recent environmental investigations initially pursued under RCRA Corrective Actions Permits have been submitted to EPA as initial documents under the IAG. The investigations showed that high levels of hydrocarbons have been found in the ground water in four study areas. White phosphorous has been detected in the sediment and surface waters in one study area. O Field, contaminated with large quantities of chemical and explosive materials, is a source of contaminant migration. Arsenic and trichloroaniline have been detected in surface waters. Ground water has been contaminated by VOCs. While no significant off-base migration has been reported from any study area, small amounts of surface water contamination (VOCs) has been identified in on-post portions of the Chesapeake Bay and on-post tributaries to the Chesapeake Bay. Resampling has confirmed original survey findings. The IAG requires that initial studies be revised into RI/FS efforts under CERCLA/ SARA. RI/FS workplans have been drafted and submitted for 10 study areas. Presence of explosives and chemical agents severely restricts RI/FS actions prolonging study time requirements.

Remedial Design/ Remedial Action (RD/RA)

Removal actions have been completed at 12 SWMUs (including eight underground storage tanks). A total of 1,200 tons of PCB and DDT contaminated soil and concrete was removed and incinerated during 1991. Twelve additional removal actions are scheduled for completion in 1992. RODs for O Field and the White Phosphorous Study Area were published in 1991.

Air Force Plant #4 (General Dynamics) (2)
Fort Worth, Texas



Service: Air Force

Size: 602 Acres

HRS Score: 39.92

Base Mission: Manufacture aircraft and associated equipment

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1984; Placed on NPL 1990; RI/FS scheduled for completion 1992

Contaminants: Solvents, paint residues, spent process chemicals, PCBs, waste oils and fuels, heavy metals, VOCs, cyanide

Funding to Date: $14.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

Air Force Plant #1, owned by the government, is operated by General Dynamics. Approximately 13,000 people in the city of White Settlement rely on the aquifer underlying the base for drinking water. Thirty sites were studied and identified as potentially contaminated. Ground and surface water contaminants include di-, tri-, and tetrachloroethylene, ethylbenzene, toluene, methylene chloride, heavy metals, cyanide, and petroleum products.

Remedial Investigation/ Feasibility Study (RI/FS)

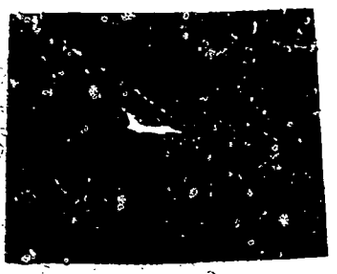
An RI/FS began in August 1986. Confirmation/quantification studies examined 30 sites and confirmed contamination of soil, surface, and ground water. Twenty-three sites were recommended for additional RI/FS study, and one site will undergo additional sampling. No further action was recommended for seven sites. The RI/FS will be completed in 1992.

Remedial Design/ Remedial Action (RD/RA)

Contaminated soil was excavated at four sites in 1986. Wells for the city of White Settlement are sampled quarterly by the Air Force. An interim ground water treatment system will be installed in 1992 to address contamination that originated from two spill sites. Quarterly monitoring is ongoing. Long-term monitoring will begin in 1994.

Air Force Plant PJKS
Waterton, Colorado

(3)



Service:	Air Force
Size:	464 Acres
HRS Score:	42.93
Base Mission:	Research and development; Missile assembly; Engine testing
IAG Status:	Initiated and expected to be signed 1992
Action Dates:	PA/SI completed 1986; Draft Final RI/FS 1988; Placed on NPL 1989
Contaminants:	Chlorinated organic solvents, fuel, hydrazine
Funding to Date:	$9.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The site is surrounded by approximately 5,200 acres of land owned by Martin Marietta (Denver Aerospace). Since 1956, Martin Marietta has developed missiles and missile components for the Air Force at this location. The production, testing, and storage facilities are located southeast of, and at a lower elevation than, the Air Force property. Chlorinated organic solvents frequently were used to clean equipment and piping. Fuels containing hydrazine were developed, purified, and tested in support of the Titan III missile program.

The Air Force PA/SI investigated potentially contaminated areas on the plant, including the Deluge Containment Pond, a two-million gallon, concrete-lined surface impoundment that receives water potentially contaminated with hydrazine from rocket engine testing; the D-1 landfill, which accepted construction debris, household wastes, and unspecified chemical wastes before its closure and cover in 1974; and three areas of a hydrazine-contaminated water and TCE spill.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in March 1986. Samples taken in 1988 from monitoring wells near the contaminated areas detected TCE, 1,1,1-trichloroethane, and Freon 113. Tests conducted in 1986 identified TCE and cis-1,2-dichloroethylene in Brush Creek, which flows from the plant 1.8 stream miles to the South Platte River. Hydrazine was also discovered in soils primarily around the systems and components areas. The Air Force published a draft RI/FS in December 1988. The U.S. Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) have contested the findings in the RI/FS. Negotiations to resolve the issues are presently in progress and nearing final resolution.

Remedial Design/ Remedial Action (RD/RA)

Seventeen draft final No Further Action Decision Documents have been published and forwarded for EPA's and CDH's review and concurrence. These documents cover the removal and remediation of eleven USTs. A facility-wide ground water monitoring program began in May 1991. The program sampled 96 monitoring wells and eight surface water stations. A study has been initiated on background soil quality. A ground water extraction system is currently located on Martin Marietta property on the West Fork Brush Creek, near its confluence with the East Fork. This system intercepts contaminants migrating in the alluvial ground water system of the West Fork of Brush Creek. In addition, the Air Force has prepared an Interim Measures Investigation/FS draft work plan to provide a detailed operations and sampling plan for field data collection and management activities at four RCRA sites and one CERCLA site during 1992.

Alabama Army Ammunition Plant (4)
Childersburg, Alabama

Service:	Army
Size:	2,200 Acres
HRS Score:	36.83
Base Mission:	Inactive; Former explosives manufacturing plant
IAG Status:	Pre-ROD IAG signed December 1989; Became effective March 1990
Action Dates:	PA/SI completed 1983; RI/FS initiated 1985; Placed on NPL 1987
Contaminants:	Munition-related wastes, heavy metals, nitroaromatic compounds
Funding to Date:	$19.39 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 21 sites as potential contaminant migration sources, with seven targeted for an RI/FS. The studies identified potential vertical contaminant migration within the aquifers and surface water contamination. A confirmation study delineated parameters and migration patterns for one aquifer and identified nitroaromatic compounds in onsite soils and in an aquifer beneath and downgradient from the manufacturing areas.

Additional sites were identified in subsequent studies; however, several of these sites have been determined to require no follow-on study

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS, begun in September 1985, is currently ongoing under the Federal Facilities Agreement (FFA). Investigations to date have determined that the ground water is contaminated with nitroaromatic compounds in concentrations above Federal Ambient Water Quality Criteria (AWQC). Onsite surface water is contaminated with nitroaromatic compounds and lead. Migration of contaminants at levels exceeding criteria is not expected.

Remedial Design/ Remedial Action (RD/RA)

Cleanup of Area A, including soil excavation and decontamination of storage igloos and buildings, was completed in 1988. Additional sampling was conducted in 1991 to confirm completion of cleanup at Area A following EPA Region IV's request.

A determination has been made by the Army to address the stockpiled soils from the remediation of Area A that are now stored in Area B as a separate operable unit. An incineration contract was awarded in May 1991, allowing the option of incinerating the explosives-contaminated soils located in Area B. Approximately 25,000 cubic yards of soil will be incinerated. The Feasibility Study for the Operable Unit has been issued. A proposed plan for remediation has been prepared. A ROD for this OU was signed in late 1991.

Anniston Army Depot
(Southeast Industrial Area)
Anniston, Alabama

(5)

Service: Army

Size: 15,245 Acres

HRS Score: 51.91

Base Mission: Maintain combat vehicles and artillery equipment

IAG Status: Pre-ROD IAG signed June 1990

Action Dates: PA/SI completed 1983; RI/FS initiated 1983; Placed on NPL 1989

Contaminants: VOCs, heavy metals, paints, acids, solvents, phenols, degreasers, ammunition wastes, oils and greases, fly ash

Funding to Date: $12.40 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 15 past disposal or spill sites potentially contaminated with hazardous wastes. The PA/SI also determined that hazardous wastes from some sites had contaminated the surface water and were probably also contaminating the ground water.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS work confirmed that the local ground water is contaminated, primarily with VOCs, phenols, and metals. Chrome at levels exceeding the National Pollutant Discharge Elimination System (NPDES) permit have been detected in ground water. Low levels of contaminants have migrated beyond the depot boundary. RIs since 1983 have indicated that contamination on the depot originates from four main sources: the residual Z-1 contamination, the Building 114 dewatering sump, the southern landfill area, and the northeast area near Building 130. Activities in 1991 included follow-on RI/FS work and monitoring.

Remedial Design/ Remedial Action (RD/RA)

Approximately 62,000 tons of contaminated materials at Site Z-1 were removed and excavated to a RCRA facility in 1983. An air stripper for removing volatiles from ground water has been operational since 1987. A stream of ground water tapped when building the basement at Building 114 currently is being treated for removal of VOCs. Expansion of the existing system to allow treatment of chrome currently is being contracted under USACE.

Interim ground water extraction and treatment systems were installed in areas of major contamination within the Southeast Industrial Area, including Site Z-1, the southern landfill, and the northeast area near Building 130. A Record of Decision (ROD) was signed in September 1991 to cover this interim remedial action.

ARDEC (Picatinny Arsenal)
Rockaway Township, New Jersey

(6)

Service:	Army
Size:	6,500 Acres
HRS Score:	42.92
Base Mission:	U.S. Army Armament Research, Development, and Engineering Center (ARDEC)
IAG Status:	Signed July 1991; Effective August 1991; Schedule approved October 1991
Action Dates:	PA/SI completed 1987; Placed on NPL 1990
Contaminants:	Heavy metals, VOCs, nitroaromatics and BNAs
Funding to Date:	$18.41 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI determined that contamination in ground water, surface water, sediment, and soils is present.

Remedial Investigation/ Feasibility Study (RI/FS)

A contract has been awarded to prepare an RI/FS concept plan to review all existing environmental data and prioritize sites based on their potential impact on public health and the environment. A field report identifying 156 sites was finalized in March 1991. The Phase 1 RI addresses six areas which include 51 sites. Draft plans for the Phase 1 RI were provided to the regulatory agencies in December 1991. Plans for the RI of the Burning Ground were submitted to EPA Region II and the New Jersey Department of Environmental Protection in September 1991 and are currently being revised. Implementation of these activities is covered under the IAG with EPA.

Remedial Design/ Remedial Action (RD/RA)

RDX has been detected in off-post residential wells and bottled water is being supplied. An IRA to pump and treat TCE-contaminated ground water near Building 24, an inactive metal shop, is completed. The system will be turned on upon State approval.

Bangor Naval Submarine Base (7)
Silverdale, Washington

Service: Navy

Size: 6,692 Acres

HRS Score: 30.42 (Site A)
55.91 (Sub Base Bangor)

Base Mission: Support for Trident submarines

IAG Status: IAG signed January 1990

Action Dates: PA/SI completed 1983; Site A placed on NPL 1987; RI/FS initiated 1988; Subase Bangor and Site F placed on NPL 1990

Contaminants: Ordnance compounds, PCBs, waste oil and grease, spent solvents, waste battery acid, pesticides, paints/painting residues, photographic chemicals, metal plating wastes, dyes

Funding to Date: $14.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

During extensive base construction in 1977, significant site contamination was identified. A PA/SI identified 42 sites as potentially contaminated and 21 sites were targeted for RI/FS work. Site A, the Explosive Ordnance Disposal Site, and Site F, the Wastewater Disposal Area for Demilitarization Operations, were of primary concern. Ground water contamination of the uppermost aquifer has been identified at both sites. The primary contaminants of concern are typical constituents of military explosives: cyclonite (RDX) and TNT. The shallow aquifer, soil, and surface water have been contaminated by TNT, RDX, OTTO fuel, and ammonium picrate. The potential for contamination of nearby shoreline sediment from on-base surface water drainage also was evaluated.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field work for Site A was initiated in May 1988, and an RI/FS was completed in August 1991. RI field work for Site F was initiated in November 1989, and an RI/FS will be completed in 1992. RI/FSs for the other eight sites will be completed in 1992 and 1993.

The Navy detected contamination in area surface waters and shellfish, but since the data are inconclusive, the risks may be very low. As part of an extensive community relations plan, the base has formed a Technical Review Committee (TRC) to allow the local community to review plans. Members include Bangor NSB; Naval Facilities Engineering Command; EPA Region X; State of Washington Department of Ecology; Bremerton/Kitsap County Health Department; Public Utility District #1 of Kitsap County; Hood Canal Coordinating Council; and community representatives from Bangor, Vinland and Olympic View, Washington.

Remedial Design/ Remedial Action (RD/RA)

The removal of underground storage tanks was conducted in 1991. Further, an IRA at Site F is being planned to reduce contaminated ground water migration.

Barstow Marine Corps Logistics Base (8)
Barstow, California

Service:	**Navy**
Size:	**5,687 Acres**
HRS Score:	**37.93**
Base Mission:	**Store and distribute supplies and equipment**
IAG Status:	**Signed October 1990**
Action Dates:	**PA/SI completed 1986; Placed on NPL November 1989; RI/FS initiated in 1990**
Contaminants:	**Waste fuels, oils, degreasers, solvents, paints/paint residues, pesticides, PCBs**
Funding to Date:	**$14.15 million**

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI was completed in 1986 and identified 36 potentially contaminated sites. The SI recommended that four sites progress into the RI/FS phase.

Ground water from the Mojave River Basin beneath the Nebo and Yermo areas used for both domestic and agricultural purposes is contaminated with VOCs. Laboratory analyses conducted in November 1988 indicated VOC contamination of the Yermo drinking and ground water, at concentrations exceeding California drinking water standards. An RFA was initiated in 1991 and is scheduled for completion in 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS work plan and sampling and analysis plan were conditionally agreed to by FFA parties in May 1990. Plan finalization, subsequent to submittal of a series of amendments, is expected in early 1992. These documents address 38 potentially contaminated sites and include a solid waste water quality assessment test of the Yermo Landfill. The 38 sites are divided into six operable units. An FFA was signed in 1990 and establishes an RI/FS schedule for all 38 sites. An investigation of the water quality at 17 offsite drinking water wells in the adjacent community of Yermo was completed in May 1990. Two wells showed contamination at trace levels. The offsite wells are scheduled for continued monitoring during the RI. The first TRC meeting was held in November 1990. The TRC includes members from Southwest Division, Naval Facilities Engineering Command; EPA Region IX; California Department of Health Services; California Regional Water Quality Control Board, Lahontan Region; County of San Bernardino; City of Barstow, public representatives; Base Environmental Officer; Base legal counsel; and the Base Public Affairs Officer. RI/FS field work was initiated in 1991 with funding provided for the installation of monitoring wells, sampling and analysis of ground water and soil, and preparation of a RI/FS report addressing several Operable Units (OUs).

Remedial Design/ Remedial Action (RD/RA)

A time-critical action to purify the potable water at the Yermo Area was completed in 1989. The activated carbon water purification systems will continue treating and removing VOCs from ground water during 1992. In addition, the removal of old industrial waste sludge was funded in 1991 and will be conducted in 1992.

Brunswick Naval Air Station (9)
Brunswick, Maine

Service: Navy

Size: 7,259 Acres

HRS Score: 43.38

Base Mission: Provide facilities, services, materials, and aircraft for anti-submarine warfare

IAG Status: Pre-ROD IAG signed 1989 between EPA and the Navy; Modified in 1990 to include the Maine Department of Environmental Protection

Action Dates: PA/SI completed 1983; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Waste oils, contaminated fuels, solvents, acids, paint residues, photographic chemicals, pesticides/herbicides, asbestos

Funding to Date: $3.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 10 past disposal or spill sites that could contain hazardous contaminants. Of these, seven were designated as having a high potential for environmental contamination, thus warranting further investigation. Ground water serving 18,000 people, as well as surface water and nearby wetlands, may be threatened by potential contaminant migration.

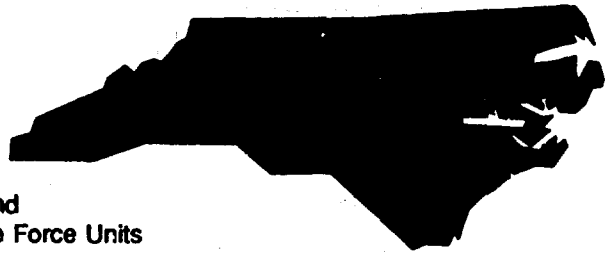
Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in April 1986 to confirm contamination, evaluate the potential for migration, and determine migration pathways. Exploration at two additional sites was initiated in 1991. A detailed FS for all sites was submitted to regulatory agencies in October 1991. Proposed plans for remedial actions have been submitted to the regulatory agencies for the complete remediation of Landfill Sites No. 1 and 3 and the containment of contaminated ground water known as the Eastern Plume. A TRC, established in December 1987, has held 10 meetings to date. TRC members include Northern Division, Naval Facilities Engineering Command; EPA Region I; Maine Department of Environmental Protection; Town of Brunswick; Brunswick-Topsham Water District; and community representatives. The three-party federal facilities agreement between the Navy, EPA and the State of Maine was signed in October 1990.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1992 for both sites 1 and 3 Landfill and the Eastern Plume Projects.

Camp Lejeune Marine Corps Base (10)
Jacksonville, North Carolina



Service: Navy

Size: 88,432 Acres

HRS Score: 33.13

Base Mission: Provide housing, training, logistical, and administrative support for Fleet Marine Force Units

IAG Status: Pre-ROD IAG signed February 1991

Action Dates: PA/SI completed 1983; RI/FS initiated 1984; Placed on NPL 1989

Contaminants: Waste oils, fuels, solvents, battery acid, lithium batteries, paints, thinners, pesticides/herbicides, PCBs

Funding to Date: $5.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 76 past spill and disposal sites as potentially contaminated with migrating contaminants. Thirty sites were targeted for further investigation. Two potentially new sites will undergo PA/SI in 1991. Wastes disposed of in landfills create a potential for soil, surface, and ground water contamination. Surface waters drain from the base to the Atlantic Ocean through the New River, both of which support recreational and commercial fishing. Several endangered species, including the American Alligator and the Red-Cockaded Woodpecker, inhabit protected areas on the base. Ground water is the sole source of potable water for the base and surrounding communities.

Remedial Investigation/ Feasibility Study (RI/FS)

An accelerated RI/FS for the Hadnot Point Industrial Area is expected to be completed in 1992. The RI/FS already has identified fuel and chlorinated solvents in the ground water and the contamination source is being investigated. Several on-base drinking water supply wells have been closed. The information available on the majority of the remaining 24 sites has been consolidated into an RI interim report focused on scoping the remainder of the RI/FS requirements.

A TRC held its third meeting in March 1991. The next meeting will be scheduled in 1992 as soon as RI/FS documentation for the Hadnot Point Industrial Area Interim Remedial Action is complete.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1992. A fence was installed around the Rifle Range Chemical Dump in 1990.

Camp Pendleton Marine Corps Base (11)
San Diego County, California

Service: Navy

Size: 125,000 Acres

HRS Score: 33.79

Base Mission: Provide housing, training, logistical, and administrative support for Fleet Marine Force Units

IAG Status: Signed October 1990

Action Dates: PA/SI completed 1988; RI/FS initiated 1989; Placed on NPL 1990

Contaminants: VOCs, spent oils, fuels, PCBs, pesticides, solvents

Funding to Date: $6.67 million

Preliminary Assessment/ Site Inspection (PA/SI)

Twenty subsurface soil borings and 18 ground water monitoring wells have been drilled, and more than 200 individual samples of surface soil, subsurface soil, surface water, and ground water have been analyzed. The 18 chemicals found all have the potential to cause toxic effects, and 12 are known carcinogens. Ground water is the potable water source for the installation. The SI indicated that the potable wells were not contaminated. An RFA is in progress to identify other potential sites for inclusion in the RI/FS. Field sampling is scheduled to begin in 1992.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1989 to investigate the nine original sites. RI/FS scoping documents, including the RI/FS work plan, health and safety plan, community relations plan, and sampling and analysis plan have been developed. An FFA was signed by DoD, EPA, and the State of California in October 1990. A TRC has been formed and includes members from Camp Pendleton MCB; Southwest Division, Naval Facilities Engineering Command; California Regional Water Quality Control Board, San Diego Region 9; EPA Region IX; California Department of Health Services, Toxic Substances Control Division; and public representatives.

Remedial Design/ Remedial Action (RD/RA)

No RD/RA activities are currently planned, but removal actions will be considered if an imminent threat is identified. Interim remedial measures were taken in 1986 to secure contaminated sites from inadvertant entry.

Castle Air Force Base
Merced, California

(12)

Service: Air Force

Size: 2,777 Acres

HRS Score: 37.93

Base Mission: Train tanker crews; Service KC-135 stratotanker

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1983; RI/FS initiated 1986; RI/FS scheduled for completion 1995; Placed on NPL 1987

Contaminants: Spent solvents, fuels, waste oils, pesticides, cyanide, cadmium

Funding to Date: $29.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

This installation began as an Army base in 1941 and was used as an aircrew training facility. Strategic Air Command (SAC) assumed responsibility for the base in 1946. Mission-support operations have generated varying quantities of hazardous wastes.

PA/SI work was completed in October 1983. The PA/SI consolidated the investigation of 37 initially identified sites into 26 potential contamination source areas. These areas included landfills, discharge areas, chemical disposal pits, fire training areas, fuel spill areas, and PCB spill areas. The Air Force believes that five of the areas (PCB spill sites) require no further investigation because PCB contamination has been removed through appropriate response actions.

Remedial Investigation/ Feasibility Study (RI/FS)

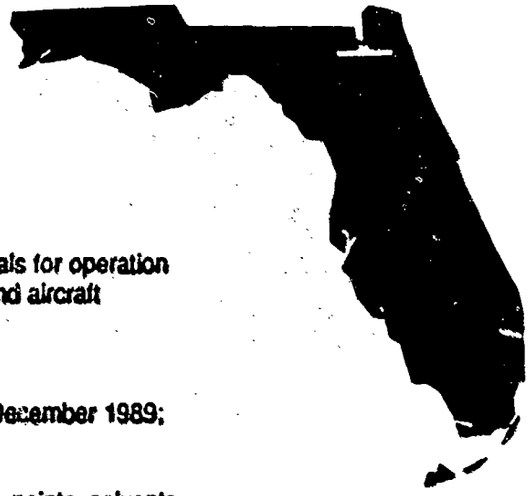
An RI/FS began in September 1986 and grouped the remaining 21 areas into several investigative sites plus a TCE plume site. Results indicate the shallow ground water aquifer beneath and adjacent to the base is contaminated with nitrates, trace amounts of pesticides, and trichloroethylene at levels exceeding state and federal drinking water standards.

Ground water investigations conducted in 1991 focused on the main base sector of Castle. The Air Force signed a ROD with EPA and the State of California in August 1991 for the cleanup of TCE contaminated ground water in the main base area. Investigations under the pre-ROD IAG now include two additional ground water units scheduled for RODs in October 1992 and February 1994. Investigations scheduled for 1992 include a significant effort to characterize the extent of the TCE contamination outside the western perimeter of Castle AFB.

Remedial Design/ Remedial Action (RD/RA)

In 1986, the TCE-contaminated drinking water supply on-base was replaced with a potable water well drawing from deeper, uncontaminated aquifers. In 1987, filter systems were installed in off-base wells to remove TCE contamination. Bottled water was supplied to off-base users before filter installation. In 1988, two deep wells replaced TCE-contaminated water supplies: one for the city of Atwater (2,000 gpm) and one to meet on-base needs (2,100 gpm). These wells are 800 to 900 feet deep. In 1989, a 1,400-gpm granular activated carbon filtration system for TCE-contaminated ground water was constructed. Two RDs were initiated in 1991 for the remediation of ground water and fuel-contaminated soils. A design schedule for the main base ground water remediation scheme is being finalized under the pre-ROD IAG. RAs initiated in 1991 include ground water remediation, capping inactive production wells, and removing abandoned USTs.

Cecil Field Naval Air Station (13)
Jacksonville, Florida



Service: Navy

Size: 30,000 Acres

HRS Score: 31.99

Base Mission: Provide facilities, services, and materials for operation and maintenance of naval weapons and aircraft

IAG Status: Signed October 1990

Action Dates: PA completed 1985; Placed on NPL December 1989; RI/FS field work began October 1991

Contaminants: Heavy metals, petroleum/oil/lubricants, paints, solvents, pesticides, fungicides, herbicides, acids, photographic chemicals, paint thinners, blasting grit

Funding to Date: $2.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 18 sites of potential contamination. Of these, 10 were recommended for further investigation. In 1986, the base was issued a Hazardous and Solid Waste Amendments (HSWA) permit, which identified 14 SWMUs. As required by the HSWA permit, a RCRA Facility Investigation (RFI) was performed on the 14 SWMUs. An additional site of potential contamination also was identified during this investigation.

Remedial Investigation/ Feasibility Study (RI/FS)

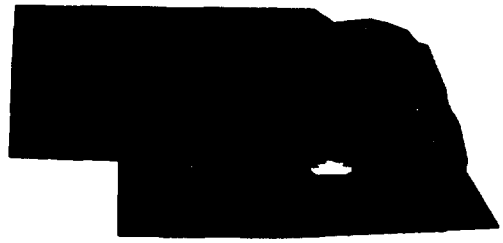
The Navy, EPA, and Florida Department of Environmental Resources (FDER) simultaneously negotiated FFAs for NAS Cecil Field, NAS Jacksonville, and NAS Pensacola. RI/FS work for six sites was approved by regulatory agencies in September 1991. A TRC meeting was last held on June 20, 1991. Six sites are undergoing a Phase I RI.

Field investigations at six sites began October 1991. A RCRA permit for site 16 has been applied for. The Navy held a Public Availability Session for the IR Program on October 2, 1991.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Cornhusker Army Ammunition Plant (14)
Hall County, Nebraska



Service: Army

Size: 11,936 Acres

HRS Score: 51.13

Base Mission: Currently standby status

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1981; Placed on NPL 1987

Contaminants: Munitions-related wastes

Funding to Date: $16.43 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Installation Assessment Study (IAS) identified 58 sources of contamination and ground water contamination by explosive compounds. The plant is currently in standby status and the Army is planning to excess it following the completion of environmental studies required for real estate transactions. Preliminary findings from the excessing study indicated extensive asbestos (mostly non-friable) contained in the loading line buildings and UXO in the burning ground area.

Remedial Investigation/ Feasibility Study (RI/FS)

A contaminant plume affecting more than 500 private wells in Hall County and nearby Grand Island was detected 3 1/2 miles off-post. An RI/FS and a public health evaluation report were submitted to regulators in 1986. RD/RA activities consisting of an alternate water supply and contaminant source remediation were recommended. An IAG, effective September 4, 1990, has been negotiated with EPA and the state.

An RI/FS was initiated in 1991. Field investigations included geophysics of the burning grounds/ landfill and sampling of residential gardens near the installation. Three public meetings were conducted. Additional effort funded during 1991 will be completed in 1992 such as monitoring well installation and investigation of the 70 remaining cesspools/sumps, shop area, old laboratory, and ditches/creek area. All data will be used to evaluate the alternatives for soil and ground water remediation.

Remedial Design/ Remedial Action (RD/RA)

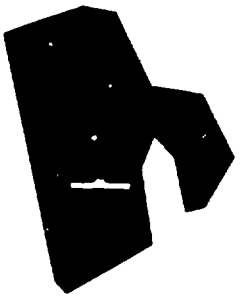
In 1986, the municipal water system was extended to 800 residences in Grand Island. A dewatering system also was completed to control the high water table. In addition, remediation was initiated on contaminated soil at 58 cesspools and leaching pits to destroy all explosive compounds. Incineration operations began in 1987 and ended in 1988. Approximately 40,000 tons of soil were incinerated. The incinerated soil was landfilled onsite in accordance with procedures agreed to by the Army and Nebraska.

Based on the identification of additional residents affected by the off-post plume, an Engineering Cost Analysis was initiated and will be completed in 1992.

As a result of residential sampling conducted adjacent to the site, eight residents were provided bottled water as an emergency action.

Davisville Naval Construction Battalion Center (15)

North Kingston, Rhode Island



Service: Navy

Size: 1,284 Acres

HRS Score: 34.52

Base Mission: Mobilize reserve naval construction battalions; Supply construction equipment; Base closure by September 1994

IAG Status: Initiated and expected to be signed 1992

Action Dates: PA/SI completed 1984; RI/FS initiated 1988; Placed on NPL November 1989

Contaminants: PCBs, VOCs, petroleum oil/lubricants, pesticides, lead

Funding to Date: $2.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

Davisville Naval Construction Battalion Center (NCBC) consists of the Main Center; the West Davisville Storage Area, located in the town of North Kingston, Rhode Island, approximately 10 miles south of Providence; and Camp Fogerty, a training facility located in the town of East Greenwich, Rhode Island, four miles west of the Main Center.

A PA/SI addressed 14 sites. A Confirmation Study/Verification Step on 13 sites was completed in February 1987. Three sites were recommended for further study by the PA/SI, seven were requested for further study by the Rhode Island Department of Environmental Management, and three were targeted for further study by the Navy. The results of the Verification Step indicated that the 13 sites posed no imminent health hazard.

Remedial Investigation/ Feasibility Study (RI/FS)

The Navy has completed a work plan for an RI/FS at 10 sites. Twenty TRC meetings have been held since April 1988. TRC members include Davisville NCBC; Northern Division, Naval Facilities Engineering Command; EPA Region I; Rhode Island Department of Environmental Management; town of North Kingstown; town of East Greenwich; USFDA; USEPA Engineering Research Laboratory, Narrangasett; Naval Ocean Systems Center, San Diego, California; and Narrangasett Bay Project.

In May 1989, the community relations plan was issued for NCBC. Field work for the RI/FS work plan was completed in the spring of 1990. The draft RI report was issued in May 1991. The Navy is currently in the process of finalizing this report.

RI/FS work will be initiated in 1992 for additional sites.

Remedial Design/ Remedial Action (RD/RA)

PCB-contaminated concrete was removed at two sites during 1991. Initiation of RD/RA work is expected in 1992.

Defense General Supply Center Richmond (16)

Chesterfield County, Virginia

Service: Defense Logistics Agency

Size: 640 Acres

HRS Score: 33.85

Base Mission: Manage general supplies for Armed Forces

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Phenols, solvents, paints/paint residues, corrosives, pesticides/herbicides, refrigerants/antifreeze, photographic chemicals, oils

Funding to Date: $6.43 million

Preliminary Assessment/ Site Inspection (PA/SI)

PA/SI work revealed 30 potential past spill and/or disposal sites. Six sites were recommended for further study under an RI/FS. Three of the sites are contiguous, with a high potential for contaminant migration. Both on- and off-base water supplies have been contaminated with phenols, chloroform, methylene chloride, dichlorobenzene, di-, tri- and tetrachloroethylene, and chromium.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986, and to date two draft RIs for the Area 50/Open Storage Area/ National Guard Area and one draft RI for the Acid Neutralization Pits have been submitted to EPA and the Virginia Department of Waste Management (VDWM). The three remedial investigations have been subdivided into eight operable units. The operable units consist of five soil units and three ground and surface water units. Draft final focused feasibility studies (FFSs), draft records of decision and draft proposed plans have been issued for two of the five soil areas. FFSs are currently being prepared for two other soil areas. Area 50/Open Storage Area/National Guard Area was designated an accelerated operable unit and moved up in the schedule. The current project schedule has a FFS starting for an operable unit every month from September 16th through March 11, 1992. Under this schedule, issuance of the last draft final proposed plan and record of decision (ROD) will be April 16, 1993.

Remedial Design/ Remedial Action (RD/RA)

Two RODs will be issued during the first quarter of 1992. One draft ROD for the Open Storage Area OU recommends limited remedial action consisting of administrative controls. The second ROD for the soil at the Acid Neutralization Pit (NAP) OU recommends remediation using vacuum extraction techniques. These plans are subject to change pending receipt of public comments. A remedial action contract will be awarded during 1992 for the ANP soil contamination. An Interim Remedial Action contract for ground water at the Area 50/ Army National Guard OU will also be awarded during 1992.

Dover Air Force Base
Dover, Delaware

(17)

Service:	Air Force
Size:	3,740 Acres
HRS Score:	35.89
Base Mission:	Air lift services for troops, cargo, and equipment
IAG Status:	Pre-ROD IAG signed 1989
Action Dates:	PA/SI completed 1983; RI/FS initiated 1987; RI/FS scheduled completion 1993; Placed on NPL 1989
Contaminants:	Solvents, paints, waste fuel and oils, VOCs muriatic and nitric acids, caustic soda, cyanide, heavy metals, phenols
Funding to Date:	$8.97 million

Preliminary Assessment/ Site Inspection (PA/SI)

Some wastes were buried in drums and others were disposed of in various on-base locations covering 44 acres. The upper aquifer was contaminated with low levels of VOCs and heavy metals. The deeper aquifer provides drinking water to the base and is not contaminated. A total of 56 sites have been identified. After the PAs, no further action was recommended at one site. SIs of 32 sites were conducted in 1991. Decision Documents recommended no further action at 18 sites where the SIs revealed no contamination above risk-based action levels.

Remedial Investigation/ Feasibility Study (RI/FS)

A presurvey, completed in June 1986, investigated 12 sites and confirmed that the concentration of VOCs and metals in soils, sediments, and surface and ground water exceeded Delaware's drinking water standards at several sites. An additional eight sites have been identified since the 1986 presurvey was completed. Contaminant source areas and the extent of contaminant migration are being investigated in an RI/FS expected to be completed in 1993.

Remedial Design/ Remedial Action (RD/RA)

In 1985, a removal and closure action conducted at Site WP-21 cleaned up the old industrial waste basin, a major source of ground water contamination. Remedial actions were conducted to comply with state regulatory requirements. Solid Waste Disposal Area Site LP-24 was remediated and closed in 1988. A ROD was signed in late 1990 for RA at Site FT-03, a former fire training area. RD is now complete for this site, and remedial action will be performed in 1992.

Edwards Air Force Base (18)
Kern County, California

Service:	Air Force
Size:	470 Square Miles
HRS Score:	33.62
Base Mission:	Aircraft research and development center
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	Initial PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1990; Final PA/SI initiated in 1990
Contaminants:	Waste oils, solvents, VOCs, petroleum hydrocarbons
Funding to Date:	$41 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Main/South Base, at the western edge of Rogers Dry Lake, is used primarily for maintaining and refueling aircraft. Large amounts of fuel have been spilled and poor disposal practices have resulted in the release of organic solvents to the ground in this area. Other sites in the area include an abandoned sanitary landfill, an area where electroplating wastes were dumped, and the storm water retention pond. The North Base, located five miles to the northeast of the Main Base area, has a drum storage site at the north end of Rogers Dry Lake, and three unlined surface impoundments where wastes were poured during the 1960s and 1970s. Contaminants include waste oils, solvents, and nitric acid generated primarily by the Air Force Rocket Propulsion Laboratory. According to a 1987 IRP report, trichloroethylene; trans-1,2-dichloroethylene, 1,2-dichloroethylene; tetrachloroethylene; and methylene chloride are present in the shallower ground water aquifer underlying the Main/South Base. Edwards AFB's 13,800 employees obtain drinking water from deep aquifer water wells within three miles of the Main/South Base.

Additional sites are being assessed to confirm the presence of contaminants and assess the need to make these areas formal IRP sites.

Remedial Investigation/ Feasibility Study (RI/FS)

A site-specific RI/FS began in August 1986 to determine the type and extent of contamination in local areas and to identify alternatives for remedial action. The sites identified at Edwards AFB include drum disposal areas, waste disposal pits, USTs, a leaking jet fuel pipeline, rocket test stands, oxidation/evaporation ponds, landfills, fire protection training areas, TCE sites, and other spill sites.

Review of the RI/FS is underway. The majority of work conducted in 1991 was RI/FS work driven by requirements for additional study.

Remedial Design/ Remedial Action (RD/RA)

In 1984, drums and contaminated soil in a drum disposal area (Site 1) were removed and the site was capped. The Main Base toxic waste disposal area (Site 2) was regraded and long-term monitoring was initiated. In the South Base POL storage area (Site 5), tanks were excavated or filled with clean sand and the area was regraded.

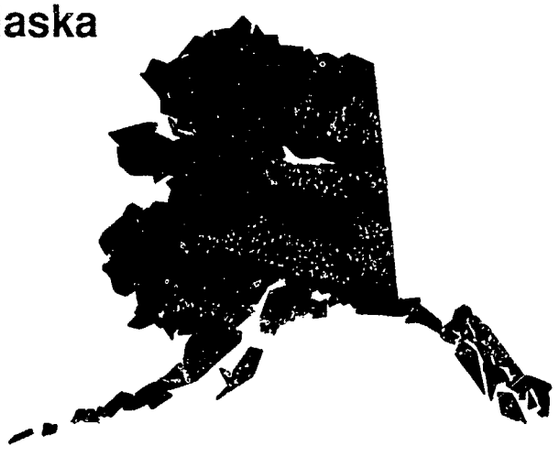
In 1989, a ground water treatment system was installed at Site 16 and placed in operation. In 1990, USTs were removed. Ground water monitoring will continue through 1992.

In 1991, through a joint effort with the EPA, heavy metals and dioxins (Site 3) underwent soil stabilization and polymer sealing.

The FFA signed in 1990 calls for acceleration of the schedule for RD/RA.

Eielson Air Force Base (19)

Fairbanks North Star Borough, Alaska



Service: Air Force

Size: 19,790 Acres

HRS Score: 48.14

Base Mission: Tactical air support to Pacific Air Forces

IAG Status: Pre-ROD IAG signed May 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1989

Contaminants: Heavy metals, petroleum/oil/lubricants, VOCs, solvents

Funding to Date: $16.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

Eielson AFB contains an active asbestos landfill and closed, unlined landfills that extend into ground water, shallow trenches where weathered tank sludge was buried, drum storage areas, and other disposal/spill areas.

Lead, arsenic, chromium, copper, nickel, and zinc have been found in the soil at the drum storage area; trans-1,2-dichloroethylene and lead have been found in shallow onsite monitoring wells. An estimated 9,000 people obtain drinking water within three miles of the base.

A number of new sites have entered the PA/SI phase under the IAG in 1991.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in August 1986. Ongoing RI/FS work is planned for IRP sites during 1992 to determine the extent of contamination on base and to identify alternatives for remedial action under the IAG.

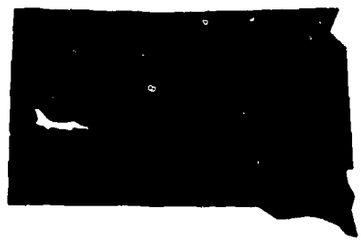
Remedial Design/ Remedial Action (RD/RA)

Several monitoring wells have been converted into static recovery wells to remove floating petroleum product from ground water. Small quantities have been recovered. Four USTs were removed in 1990.

During 1991, IRAs included removal and incineration of 10,000 cubic yards of petroleum, oil, and lubricant (POL)-contaminated soils spilled from a UST. RD activities in 1992 will include designs for floating product recovery using vacuum extraction; static recovery of floating product; in-situ bioremediation of POL-contaminated soils; and excavation to support IRAs at 13 sites.

Ellsworth Air Force Base
Rapid City, South Dakota

(20)



Service:	Air Force
Size:	4,858 Acres
HRS Score:	33.62
Base Mission:	Long-range bombardment missiles and air refueling
IAG Status:	Initiated and expected to be signed 1992
Action Dates:	PA/SI completed 1985; RI/FS initiated 1987; Placed on NPL 1990
Contaminants:	VOCs, metals, solvents, jet fuel
Funding to Date:	$22.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

The base is bordered by open land on the north, west, and south and by commercial residential areas to the east.

The September 1985 PA/SI report identified 18 sites with potential hazardous waste disposal. These sites included six landfills, five spill sites, four fuel sites, the Badlands Bombing Range, a water contamination site, and a ground contamination site.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was initiated in 1987 and completed in 1989. Four of the sites (the fire training area, an auto shop, a fuel hydrant, and a landfill) required an FS in 1991. Further remedial investigations/feasibility studies are planned for 1992.

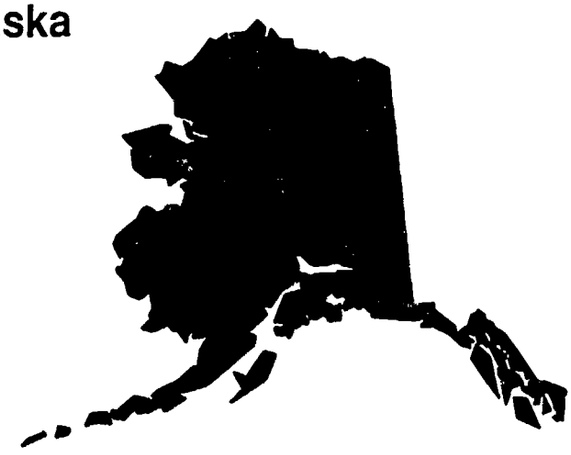
Remedial Design/ Remedial Action (RD/RA)

Various USTs have been removed to date and additional UST removals are scheduled for 1992. During 1991, the Badlands Bombing Range was fenced and properly labelled with warning signs. In addition, a temporary water supply line was constructed to supply an adjoining landowner with an alternative drinking water supply. Also, the RA for the 70 Hangar Complex was finished.

Elmendorf Air Force Base

Greater Anchorage Borough, Alaska

(21)



Service: Air Force

Size: 13,100 Acres

HRS Score: 45.91

Base Mission: Headquarters to Alaskan NORAD Region; F-15 Fighter Wing; NORAD Region Operations Control Center; Rescue Coordination Center; Military Airlift Group flying transports

IAG Status: Initiated and expected to be signed in 1992

Action Dates: Original PA/SI completed 1983; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: VOCs, heavy metals, petroleum/oil/lubricants, solvents, paints

Funding to Date: $15.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

An estimated 121,000 individuals reside within three miles of the installation, but drinking water for these residents is obtained from surface supplies located 12 to 30 miles north of the base. Emergency backup water supply wells for Elmendorf AFB are located within three miles of identified contamination.

The original PA/SI identified a number of areas which had received hazardous wastes, including lead, acid batteries, and waste solvents. Unlined and unbermed landfills are located in sandy and gravelly soils. Shop wastes, including solvents and paint thinners, were disposed of in a naturally occurring unlined trench. At some locations, fuel or solvents spilled onto floor drains that feed into dry wells. The last area investigated was a JP-4 spill site.

Remedial Investigation/ Feasibility Study (RI/FS)

Continued RI/FSs are planned for 1992. Additional field work will be conducted at former landfills, hazardous waste disposal locations, and spill sites. Studies will be done in areas where shop wastes, including solvents and paint thinners, have reportedly been discharged through building drains emptying into dry wells. The current RI/FS will be conducted in conformance with the Federal Facilities Agreement for 32 sites. Additional studies will be conducted for the remaining sites.

Remedial Design/ Remedial Action (RD/RA)

Removal actions planned for 1992 include remediation of an abandoned asphalt staging area containing 4,700 drums of asphalt and other debris. A second project involves the removal of an abandoned underground 50,000-gallon JP-4 tanks.

An interim remedial action will be designed in 1992 to remove spilled fuel from soil at a four million gallon underground storage facility taken out of service in 1991.

El Toro Marine Corps Air Station (22)
Irvine, California

Service:	Navy
Size:	4,700 Acres
HRS Score:	40.83
Base Mission:	Major west coast jet fighter facility
IAG Status:	Pre-ROD signed October 1990
Action Dates:	PA completed 1987; RI/FS initiated 1989; Placed on NPL 1990
Contaminants:	Waste fuels and oils, organic solvents, degreasers, paints, photographic chemicals, PCBs, corrosives, refrigerants, pesticides, herbicides, VOCs
Funding to Date:	$2.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS) completed in May 1986 recommended an SI be performed for nine of 17 sites. In response to regulatory agency comments during September 1986, four sites were added to the SI. An SI work plan was finalized in August 1988, but funding restrictions prevented implementation.

In 1985, the Orange County Water District (OCWD) discovered TCE in two off-station wells during 1985. A perimeter investigation was conducted and documented TCE contamination up to 90 ppb in shallow ground water at the base boundary, and limited migration of contamination off station. OCWD completed an off-station ground water investigation in 1989 and documented the existence of a large TCE plume in deep ground water over a 3-mile radius off base. Their results have generated controversy regarding base responsibility for the contamination. As an initial remedial measure, existing monitoring wells were retrofitted with pumps and a small activated carbon treatment plant was constructed. The Orange County Water District (OCWD) is designing a desalter facility for removal of total dissolved solids (TDS), nitrates, and the TCE from the ground water in the vicinity of MCAS El Toro.

The California Water Quality Control Board requested that approximately 30 additional sites be investigated. In response to this request and to comply with RCRA requirements, the Navy is conducting an RFA.

Remedial Investigation/ Feasibility Study (RI/FS)

Development of an RI/FS work plan began in December 1989 and includes 22 sites. An additional RI/FS work plan will be generated in 1992 to incorporate one more site and any additional sites identified for the RI/FS process through an RFA.

An FFA between the Department of the Navy, EPA, and the State of California was signed in October 1990. The TRC members include El Toro MCAS; Southwest Division, Naval Facilities Engineering Command; EPA Region IX; State of California Department of Health Services; California Regional Water Quality Control Board; Orange County; Orange County Water District; Irvine Water District; and public representatives.

Remedial Design/ Remedial Action (RD/RA)

A treatability study was implemented in 1989 to test the feasibility of using activated carbon to remove contaminants from ground water. Ground water is being pumped continuously from three existing monitoring wells and treated using this system. RD/RA activities are expected to be initiated in 1995.

Fairchild Air Force Base (4 Waste Areas) (23)
Spokane County, Washington

Service: Air Force

Size: 4,300 Acres

HRS Score: 31.98

Base Mission: Strategic Air Command operations

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1988; Placed on NPL 1989

Contaminants: Solvents, fuels, oils, electroplating chemicals, cleaning solutions, corrosives, photographic chemicals, paints, thinners, pesticide residues, PCBs, low-level radioactive wastes

Funding to Date: $20 million

Preliminary Assessment/ Site Inspection (PA/SI)

A well within base boundaries is a standby water supply for the base's 5,200 employees. Approximately 250 private wells serving about 12,000 people are within three miles of the facility. West Medical Lake, Medical Lake, and Silver Lake, located within three miles downstream of the base, support wildlife and are used for recreational activities.

A PA/SI identified several waste disposal sites at Fairchild AFB and one site at the USAF/FAA operations at Mical Peak. Land-use restrictions due to hazardous waste contamination are in effect. Four waste areas covering 85 acres comprise the NPL site and include Building 1034 French drain and dry well system; two landfills, one northeast of Taxiway 8 and one at Craig Road; and the industrial waste lagoons. More than 4,000 drum-equivalents of carbon tetrachloride and other solvents, paint wastes, plating sludges containing cadmium and lead, and related industrial wastes have been disposed of in the four areas.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in 1988 and will be completed in 1992. An RI/FS for additional sites began in 1991 and is expected to be completed by the end of 1994. The industrial waste lagoons, a fire training area, and two base landfills lead the list of sites being assessed under the RI/FS.

Remedial Design/ Remedial Action (RD/RA)

USTs were removed during 1990 and 1991. Soils contaminated with fuels and oils were also removed in 1991. Construction of extraction wells downgradient of the Craig Road Landfill began in 1991. Craig Road landfill and a sewer connection linking the Fairchild sewage system to the Spokane system are scheduled for completion in 1992.

F.E. Warren Air Force Base (24)
Cheyenne, Wyoming

Service: Air Force

Size: 5,866 Acres

HRS Score: 39.23

Base Mission: Strategic Air Command operations: Strategic Missile Wing; Aerospace Rescue and Recovery Squadron

IAG Status: Signed September 1991

Action Dates: PA/SI completed 1985; RI/FS initiated 1991; Placed on NPL 1990

Contaminants: Lubricating oils, solvents, paints, coal and fly ash, batteries/battery acid

Funding to Date: $11.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Agricultural lands and industrial developments surround F.E. Warren AFB. According to tests conducted in May and June 1987 by the U. S. Geological Survey (USGS), TCE and chloroform are present in monitoring wells on base. An estimated 2,400 people obtain drinking water from private deep aquifer wells upgradient and within three miles of hazardous substances on base. USGS also detected lead in soil at the firing range, and TCE in Crow and Diamond Creeks on base downgradient of spill areas. The Air Force has identified areas involving spills or leaks, six landfills, two fire training areas, a battery acid disposal pit, the firing range, and a contaminated surface water area.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS work began in April 1987 and will continue until 1996. The eight decision documents produced in 1990 specifying no further action were rejected by EPA.

Remedial Design/ Remedial Action (RD/RA)

Water wells have been installed to monitor ground water contamination. During 1990, soils and TCE were removed from Spill Site No. 7, a major contaminant source for both ground water and Diamond Creek. Ground water recovery and treatment will begin in the spring of 1992. Remedial actions are scheduled for two spill sites and two fire training areas in 1992.

Fort Devens (25)

Fort Devens, Massachusetts

Service: Army

Size: 9,416 Acres

HRS Score: 42.24

Base Mission: Army Reserve and National Guard personnel training; Army Security Agency Training Center and School support

IAG Status: Pre-ROD IAG signed June 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1989; Placed on NPL 1989

Contaminants: VOCs, petroleum products, battery acid, PCBs, pesticides, herbicides, photographic chemicals, medical wastes

Funding to Date: $5.28 million

Preliminary Assessment/ Site Inspection (PA/SI)

The initial assessment recommended that no follow-up studies are required and that the Fort Devens Sanitary Landfill facility Closure Plan should be coordinated with the Commonwealth of Massachusetts. In 1985, Fort Devens applied for a RCRA Part B permit for its hazardous waste storage facility. In the permit process, Fort Devens identified 40 SWMUs. A detailed SI of the six highest priority sites was initiated in September 1990 and field work was completed in August 1991. A draft SI report is due in January 1992. Another detailed SI for the next highest priority sites was initiated in September 1991.

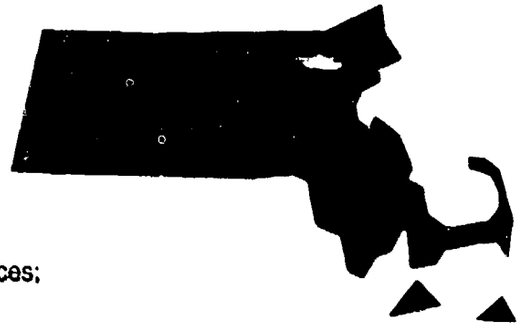
Remedial Investigation/ Feasibility Study (RI/FS)

A master environmental plan was prepared in 1989. This plan identifies and prioritizes all potential hazardous waste sites and proposes appropriate investigative and corrective action efforts for each site. An RI of two landfills was initiated in September 1990 and the field effort was completed in August 1991. A draft RI report is due in March 1992. A follow-on RI and FS project was initiated in September 1991.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Fort Devens–Sudbury Training Annex (26)
Middlesex County, Massachusetts



Service: Army

Size: 2,301 Acres

HRS Score: 35.57

Base Mission: Troop training; Geophysics laboratory services; Fish and wildlife management

IAG Status: Signed June 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS completion expected 1993

Contaminants: VOCs, petroleum products, PCBs, pesticides, herbicides

Funding to Date: $3.76 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sudbury Annex is managed by Fort Devens Army Installation, located approximately 12 miles to the northwest. Prior to 1982, Sudbury Annex was part of the Natick Research Development and Engineering Center (NRDEC). In 1982, all but a small housing area was excessed to Fort Devens. The PA/SI recommended a follow-on survey of Sudbury Annex to confirm the presence or absence of contamination, and to determine the extent of contaminant migration. In 1991, a Master Environmental Plan (MEP) was developed which identified 68 potentially contaminated sites. Follow-on SI work is required for 11 sites, with completion of all SI work scheduled for 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was initiated in November 1986. Three sites were identified as contributing to the HRS score. Currently, an RI/FS is being performed at 13 sites identified during the MEP investigations.

RI work for the remaining sites is scheduled for completion in 1993.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. A removal action was conducted in 1985 for the PCB Spill Area. Further study is required for this location.

Fort Dix (Landfill Site)
Pemberton Township, New Jersey

(27)

Service: Army

Size: 32,600 Acres

HRS Score: 37.40

Base Mission: Army Reserve and National Guard training and combat support

IAG Status: Effective date September 27, 1991

Action Dates: RI/FS initiated 1985; Placed on NPL 1987; PA/SI completed 1989

Contaminants: VOCs, heavy metals, petroleum/oil/lubricants, solvents, photographic chemicals, pesticides, herbicides, medical wastes

Funding to Date: $3.77 million

Preliminary Assessment/ Site Inspection (PA/SI)

During the PA, the Army identified past disposal and/or spill sites potentially contaminated with hazardous waste. The sites were investigated further during the SI. Ground water was found to be contaminated with lead, nickel, cadmium, petroleum hydrocarbons and VOCs (1,1,1-trichloroethane, 1,1,2-TCE, and chloroform). Further investigation is recommended to determine the presence, magnitude, and extent of contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1985 and indicated that a plume of contaminated ground water was emanating from the southwestern portion of the Fort Dix Sanitary Landfill. The contaminants do not appear to be highly concentrated. A geophysical field investigation suggested that the stream and associated surface water bodies act as a hydraulic barrier to suspected contaminant migration. The recommended course of action is to cover the lower 50 acres of the landfill with a low-permeability cap, and to add two feet of final cover to the remaining uncapped portion. A long-term (30-year) monitoring program has been implemented. A phased installation-wide RI is currently underway for the remaining sites.

Remedial Design/ Remedial Action (RD/RA)

A ROD was signed for the landfill site. RD is underway for Phase I. Cap construction is scheduled for FY 1992.

Fort Lewis (28)
(Landfill #5 and Logistics Center)
Tacoma and Tillicum, Washington

Service: Army

Size: 86,541 Acres

HRS Score: 33.79 (Landfill)
35.48 (Logistics Center)

Base Mission: I Corps Headquarters - plans and executes Pacific, NATO, or other contingencies; Troop training; Airfield; Medical Center; Logistics for supplies and maintenance.

IAG Status: Pre-ROD IAG signed January 1990

Action Dates: PA completed 1984; Landfill 5 placed on NPL 1987; RI/FS initiated 1988; Logistics Center placed on NPL 1989; RI/FS completed in May 1990; ROD signed September 1990

Contaminants: Spent solvents, metal plating wastes, pesticides, PCBs, waste oils and fuels, VOCs, asbestos, coal liquefication wastes, polycyclic aromatic hydrocarbons, paint, battery electrolytes, metals, paint strippers and thinners

Funding to Date: $11.17 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA investigation revealed several potentially contaminated areas. SIs have been completed at Park Marsh Landfill (used previously by the Veterans Administration), Landfill 5, and the Logistics Center. Preliminary results at Park Marsh Landfill detected PCBs and pesticides in the sediments. Landfill 5 and the Logistics Center showed ground water contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

A RI/FS for the Logistics Center was completed in May 1990. The primary ground water contaminants at the Logistics Center are solvents, trichloroethylene (TCE) and cis-1,2-dichloroethylene (DCE). In general, the ground water contamination moves off-post from the Logistics Center toward the town of Tillicum.

An RI/FS began at Landfill 5 in 1988. The primary ground water contaminants at Landfill 5 are iron, manganese, benzene, TCE and vinyl chloride. The RI and the human health and ecological risk assessments will be completed in December 1991. The contaminant levels have been decreasing since the installation of the landfill cap and are predicted to continue to decrease to levels that do not suggest risks to human health and the environment. A ROD is scheduled for Spring 1992.

Remedial Design/ Remedial Action (RD/RA)

Based on the ROD, the cleanup plan for the Logistics Center is to pump and treat the ground water. The RD is conducted in two phases. Phase I includes the installation of the well fields. Phase II includes the design and installation of the treatment plant, pumps, piping and other associated equipment. Phase I pilot wells were installed, and pumping tests were completed in the summer of 1991. Installation of the Phase I well field is scheduled for early 1992. Phase II design will follow quickly behind with RA scheduled for late 1992.

The ROD also includes monitoring and soil sampling to ensure that all remaining sources of soil contamination have been identified and characterized.

Fort Ord
Marina, California

(29)

Service: Army

Size: 29,598 Acres

HRS Score: 42.24

Base Mission: Home of the 7th Infantry Division (Light)

IAG Status: Pre-ROD IAG signed July 1990

Action Dates: PA/SI completed 1990; RI/FS for landfills initiated 1989; Installation-wide RI/FS initiated 1990; RD/RA initiated 1988; Placed on NPL 1990

Contaminants: Petroleum wastes, VOAs

Funding to Date: $14.12 million

Preliminary Assessment/ Site Inspection (PA/SI)

A preliminary hydrogeological investigation (PHI) completed in 1987 identified the sanitary landfills as a possible source of contamination for the City of Marina's backup supply well. This investigation determined also that other installation supply wells were a potential conduit for contamination between aquifers.

PA/SIs completed in 1990 identified contaminants including petroleum wastes and VOAs. These sites include sewage treatment plants, motor pools, AAFES Dry Cleaner and Gas Station, old DRMO and DEH yards, a practice fire drill pit, and EOD range areas. In addition, the location of numerous underground storage tanks have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

The landfills' RI/FS was initiated in 1989. Eleven monitoring wells were installed to supplement the 13 PHI wells, and four sets of samples have been taken. This site is one of two operable units in the IAG.

During the literature search and interview process conducted as part of the base-wide RI/FS, several new sites were identified. Further investigation of these sites was initiated in September 1991.

Remedial Design/ Remedial Action (RD/RA)

A ground water/soil treatment system at the Fritzche Army Air Field has been operating since 1988. One hundred percent of the contaminated soil has been cleaned and removed. Ground water at this site should be cleaned by 1995. An interim remedial action project to close the 10 installation wells identified as conduits for contamination was completed in 1990.

Fort Riley
Junction City, Kansas

(30)

Service: Army

Size: 150 Square Miles

HRS Score: 33.79

Base Mission: Develop, train and maintain the 1st Infantry Division (Mechanized)

IAG Status: Docket No. VII-90-F-0015, signed 28 February 1991

Action Dates: Placed on NPL 28 June 1991

Contaminants: Tetrachloroethane, mercury waste, pesticides wastewaters, acetone, methylene chloride, carbon tetrachloride

Funding to Date: $4.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI focused on past and current usage of toxic and hazardous materials, and their potential to migrate off the installation. The PA/SI determined that toxic and hazardous wastes (primarily waste oils and degreasing solvents) were formerly (mid-1960s to 1970) disposed of in the landfill southwest of Camp Funston. The landfill has been investigated and was closed in accordance with the State of Kansas regulations. Limited hydrogeological and water quality data indicate that contaminants are not migrating at significant rates from the landfill. The area around Fort Riley is predominantly rural and agricultural. The Fort incorporates seven landfills, numerous motor pools, burn and firefighting pit areas, hospitals, dry cleaning shops, and pesticide storage and mixing areas. The sanitary landfills at Camp Funston and the Main Post (cleaning solvents and pesticide residues) are suspected potential sources of contamination at Fort Riley. A PA/SI will be conducted to determine the presence or absence of contamination associated with operating practices at the former Dry Cleaning Facility (Bldg. 180).

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in 1991 to determine the nature and extent of contamination caused by the discharge of waste and rinsewater from mixing operations at the Pesticide Storage and Preparation Facility and at the Southwest Funston Landfill.

The object of this project is to investigate and determine the nature and extent of environmental contamination at the Southwest Funston Landfill.

The findings and recommendations associated with these investigations will be incorporated in a Remedial Investigation report prepared for each site. Completion is expected in 1993.

Remedial Design/ Remedial Action (RD/RA)

Thirty-eight abandoned USTs and ancillary equipment were removed in 1990. Additional UST assessment/remediation projects are currently underway. Final remedial actions will begin after completion of the RI/FS.

Fort Wainwright

(31)

Fairbanks North Star Borough, Alaska

Service: Army

Size: 917,993 Acres

HRS Score: 42.4

Base Mission: Headquarters of the 6th Infantry Division (Light)

IAG Status: Initiated and expected to be signed November 1991

Action Dates: PA/SI completed 1983; Placed on NPL 1990; RI/FS initiated 1989

Contaminants: Petroleum/oil/lubricants, heavy metals, solvents, pesticides, paints

Funding to Date: $4.15 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Army assessment completed in 1981 and subsequent facility assessments have identified 41 potential source areas in addition to numerous potential POL sources at Fort Wainwright. Most sites were used for past disposal of waste oils and solvents. These sites include a 40-acre landfill where POL, solvents and paints were disposed; Fire Training pits with POL and solvent contamination; drum burial sites, a chemical agent burial site, leaking underground storage tanks that have affected the water table; and motorpools.

Remedial Investigation/ Feasibility Study (RI/FS)

Environmental investigation activities including field work and compilation of existing data have occurred at various sites. These sites include the North Post Site, the landfill, Nike Sites B and C, and an abandoned tank farm.

A Draft Federal Facility Agreement (FFA) has divided Fort Wainwright into five operable units. Each operable unit will have an RI/FS. The first RI/FS operable unit will include the Landfill, Power Plant Coal Storage Yard, and Fire Training Pits. It is scheduled to begin in 1992 with a draft ROD scheduled in FY 1995. Other activities planned in 1992 include a comprehensive ground water investigation.

Remedial Design/ Remedial Action (RD/RA)

Forty-eight leaking or abandoned underground storage tanks have been removed since 1988. Contaminated soil around these tanks has been removed and stockpiled awaiting disposal. An abandoned pesticide hut was removed in 1991. Soil removal around a petroleum pipeline break is anticipated to begin in the spring of 1992.

Additional RD/RA work will begin after completion of RI/FS activities.

George Air Force Base (32)
Victorville, California

Service:	Air Force
Size:	5,347 Acres
HRS Score:	33.62
Base Mission:	Tactical fighter operations; Train aircraft and maintenance personnel; Maintain aircraft and ground support
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1986; RI/FS initiated 1986; Placed on NPL 1990
Contaminants:	Petroleum/oil/lubricants, VOCs, heavy metals
Funding to Date:	$13.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

During a PA/SI, the Air Force identified several potentially contaminated areas. These sites include the Waste POL Leach Field, the Fire Training Area, the Hazardous Waste Storage Yard, the STP Percolation Ponds, the Abandoned Waste Fuel Dry Well, the Southeast Disposal Area, the Northeast Disposal Area, and the Industrial/Storm Drain. These sites were investigated further in 1986 and 1988 under the IRP.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field studies were conducted in 1986 and 1988. Results indicate POL, VOC, and heavy metal contamination of soils in several areas, and TCE and radionuclide contamination of ground water. The radioactive materials are believed to be naturally occurring within the region. Ground water monitoring is being conducted to confirm previous findings.

The sites at George AFB have been combined into three operable units (OU). RIs and FSs for these OUs are continuing and are planned for completion in mid 1993.

Remedial Design/ Remedial Action (RD/RA)

The treatment system for the Northeast Disposal Area was constructed in 1990. The RA consists of extracting the TCE-contaminated ground water and treating it by using air stripping. The industrial storm drain was cleaned and removed in 1991. Removal of JP-4 pure product from ground water at several locations near the flightline will commence in March 1992. Removal of underground storage tanks and surrounding contaminated soils is ongoing.

Griffiss Air Force Base
Rome, New York

(33)

Service:	Air Force
Size:	5,836 Acres
HRS Score:	34.20
Base Mission:	Air refueling operations; Long-range bombardment
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1981; Placed on NPL 1987; RI/FS scheduled for initiation 1991
Contaminants:	VOCs, heavy metals, greases, degreasers/caustic cleaners, dyes, penetrants, solvents
Funding to Date:	$37.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Mohawk River borders the base on the west and south. A PA/SI identified sites containing hazardous materials from past disposal activities. Studies detected surface contamination at the Tank Farm and potential ground water contamination from dry wells and a lindane spill.

Remedial Investigation/ Feasibility Study (RI/FS)

Confirmation studies began in October 1987. Initial studies detected contaminated ground water in a limited area near Landfill 1; PCB-contaminated soils at Building 112; fuel product contamination of soils and ground water at the Tank Farm; heavy metal contamination of soils in the Battery Disposal Pits; and VOC contamination of ground water at Landfill 7.

The RI/FS work plan was submitted to EPA and the State of New York in 1991. The RI/FS began in 1991 and is scheduled for completion in late 1992. All off-base areas containing wells that have been contaminated with glycols are proposed for inclusion in the RI/FS.

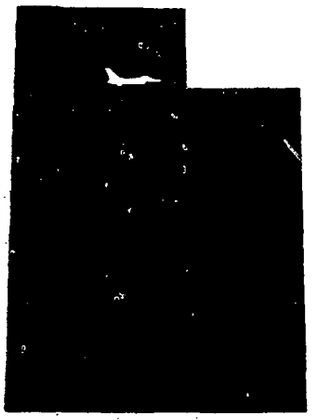
Remedial Design/ Remedial Action (RD/RA)

Several interim remedial actions have been taken on base. In 1985-86, contaminated soil was removed from several IRP sites. Several USTs were removed from the Tank Farm and contaminated soil was removed from the Battery Acid Disposal Pits in 1987. Additional UST's were removed in 1988. RAs in 1989 included modifications to a landfill cap and the removal of several USTs. Contaminated soil from an area adjacent to an aircraft nosedock was removed in late 1990.

Construction on an off-base water distribution to replace the impacted private domestic wells was completed in 1991. Remedial actions planned for 1992 include building 110 USTs, removing contaminated soil, and designing landfills #2 and #9.

Hill Air Force Base
Ogden, Utah

(34)



Service:	Air Force
Size:	6,666 Acres
HRS Score:	49.94
Base Mission:	Logistics for weapons systems
IAG Status:	Pre-ROD IAG signed April 1991
Action Dates:	RI/FS initiated 1985; Placed on NPL 1987; PA/SI ongoing
Contaminants:	VOCs, sulfuric and chromic acids, solvents. petroleum wastes
Funding to Date:	$22.63 million

Preliminary Assessment/ Site Inspection (PA/SI)

The IRP includes investigation and cleanup activity at 36 sites on base, seven Air Force sites off-base, and two private off-base sites. Of the 36 on-base sites, 29 are grouped into seven geographic areas (operable units).

Operable Unit 1 contains Landfills #3 and #4 and the fire training area. Pollutants in these sites include industrial waste water treatment plant sludges, liquid chemicals (primarily hydrocarbons and chlorinated solvents), and other hazardous and municipal wastes. Operable Unit 2 includes chemical disposal pit #3, which received TCE and other solvents and sludges and ranks as one of the most highly contaminated sites in the Air Force. Operable Unit 3 comprises Berman Pond, several USTs that leaked solvents and sodium hydroxide, and drying beds for industrial wastewater treatment plant sludges. Operable Unit 4 consists of Landfills #1 and #2. Although no hazardous waste has been detected, TCE was dumped along a road near these sites. Operable Unit 5 is the Tooele Army Rail Shop area and is contaminated by paint stripping and other industrial activities. Operable Unit 6 includes Building 1915, the site of missile fuel pack maintenance, suspected as a source of TCE. No contamination has been detected at the waste asphalt dump. Operable Unit 7 includes three sites of chromium contamination, two at Building 225 and one at Building 220.

The Air Force sites off-base include two landfills, Chemical Disposal Pit #4, an herbicide orange test-site, the Utah Test and Training Range (UTTR), and the Little Mountain Test Annex industrial sludge disposal site. Landfill #5 received hazardous waste, while the other landfill received municipal trash. Chemical Disposal Pit #4 primarily received petroleum hydrocarbons. The herbicide-orange test-site was found to be uncontaminated. The UTTR site received wastes from burning ordnance and rocket motors. The Little Mountain site holds a concrete-lined sludge bed containing wastewater treatment plant sludges.

A private site off-base on Layton Ranch received chromium-contaminated soil from Hill AFB. The contamination has been removed and the site is undergoing RCRA clean closure. A second private off-base site contains agricultural field drains contaminated with low levels of TCE (20 ppb), possibly from Hill AFB. Assessment of the health risks is being planned.

The initial PA for Hill AFB was completed in 1982. Subsequent SIs were conducted in 1984 and 1986-87. Fourteen sites at Hill AFB, two UTTR sites, and one site at Little Mountain were evaluated. As a result, Hill AFB was placed on the NPL in July 1987 with 12 sites grouped into 5 operable units. The UTTR and Little Mountain sites were not placed on the NPL.

Since NPL placement, additional Hill AFB and UTTR sites have been identified. Currently, 21 Hill AFB and three UTTR sites are in various stages of RI/FS studies.

Hill Air Force Base
Ogden, Utah

(Continued)

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in March 1985. The five operable units at Hill AFB are in various stages of RI/FS study. All operable units experience contaminant migrating off-base through the shallow ground water. The deeper drinking water aquifer does not seem to be affected. Two stormwater retention ponds and the Little Mountain sludge drying bed also are being studied.

The RI/FS for Operable Unit 1 has identified chromium and at least 14 VOCs in ground water, including chlorinated-ethenes, ethanes, benzene, methyl ethyl ketone, toluene and vinyl chloride. Low levels of these contaminants are migrating off-base.

The RI/FS for Operable Unit 2 has detected nine dense non-aqueous phase liquid (DNAPL) contaminants, of which TCE is the most prevalent at 1,700,000 ppb. Off-base contamination was discovered in the shallow aquifer. RI/FS studies have included pump tests and treatability analysis. An interim remedial action ROD for source recovery of the DNAPL has been signed.

The RI/FS for Operable Unit 3 found five VOCs, cadmium and lead in shallow ground water. The contaminants may have migrated off-base to the Layton Ranch field drains.

The RI/FS for Operable Unit 4 found four VOCs in shallow ground water. Contaminant distribution patterns indicate roadside dumping was responsible rather than landfill deposits.

The RI/FS for Operable Unit 5 began in the summer of 1989. No contamination was found in on-base shallow ground water, but five VOCs were detected in soil gas. Four of these five chemicals have been detected off-base in a spring, but concentrations are within or just above drinking water standards. Hill AFB is monitoring the spring water.

Operable Unit 6 has completed its site evaluation. The report is due in January 1992.

Operable Unit 7 will begin a RCRA monitoring program on the Building 220 site. The site evaluation for the Building 225 chromium site is currently under regulatory review. The other Building 225 site has had some contamination removed. The results have been submitted to the EPA's PCB office. Chromium-contaminated soil from Building 225 accidentally dumped on a ranch in Layton has been removed and the site declared clean.

The RI is complete for the Little Mountain sludge beds. Contaminants, predominantly phenol and heavy metals, have not migrated beyond the ditch behind the beds. An RD/RA is planned to remove the contaminated soils to a RCRA TSD facility in FY 1992.

RODs should be signed in 1993, completing the RI/FS process. A pre-ROD IAG was signed in April 1991.

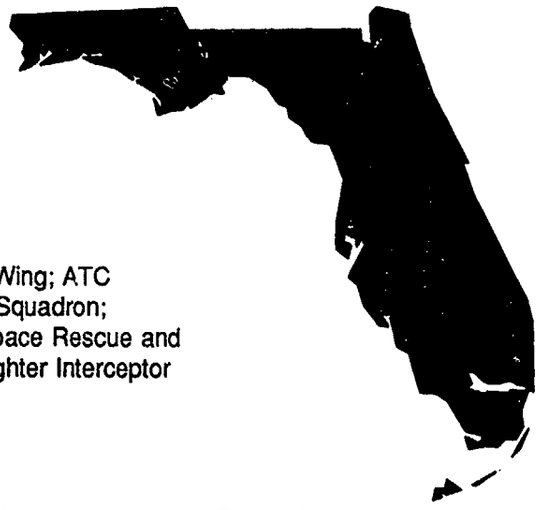
Remedial Design/ Remedial Action (RD/RA)

On-base, Hill AFB has initiated remedial actions at Operable Units 1, 2, and 3, as well as at three other sites.

IRAs at Operable Unit 1 were performed to lessen off-base contaminant migration. Hill AFB capped 70 acres of landfill, extracted and treated contaminated ground water from seven wells and two infiltration galleries, and installed a mile-long bentonite slurry wall. More than 50 million gallons of contaminated ground water have been treated. As a result of these actions, VOC concentrations in off-base seeps decreased 99 percent since 1984.

Off-base, contaminated ground water from Operable Unit 2 has been treated by activated carbon since 1987. Two property owners have been hooked up to municipal wells and supplied with irrigation water. The ROD for interim remedial action was approved in late FY 1991 and remediation will begin in FY 1992. At Operable Unit 3, Berman Pond was capped. In 1989-90, at a JP-4 spill site, soil venting removed 190,000 pounds of fuel. Two old PCB spill sites were excavated and disposed of in 1990.

Homestead Air Force Base (35)
Homestead, Florida



Service: Air Force

Size: 2,916 Acres

HRS Score: 42.40

Base Mission: Tactical Air Command; F-16 Fighter Wing; ATC sea-survival school; Tactical Control Squadron; Naval Security Group Activity; Aerospace Rescue and Recovery Squadron (AFRES) and Fighter Interceptor Group operations

IAG Status: Pre-ROD IAG signed March 1991

Action Dates: PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: Metal plating wastes, VOCs, cyanide

Funding to Date: $4.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Homestead AFB is mostly agricultural. Wastes have been disposed of onsite since the facility opened in 1942. Electroplating operations were conducted onsite, and plating wastes containing heavy metals and cyanides were allegedly disposed of directly on the ground.

The PA/SI identified three major areas of concern: the Fire Protection Training Area, the Residual Pesticide Disposal Area, and the Electroplating Disposal Area.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in August 1987 at the Fire Protection Training Area (FPTA), Electroplating Waste Disposal Area, and Residual Pesticide Disposal Area. IRP studies have detected elevated levels of VOCs at FPTA-3. Analytical results from the RI showed ground water contaminant levels of 26 ug/l benzene, 25 ug/l chlorobenzene, and 52 ug/l ethylbenzene. A monitoring well was installed and benzene was detected in the ground water at concentrations which exceed the Florida Primary Drinking Water Standard. Ethyl ether was detected in high concentrations in the shallow and intermediate ground water. Its presence is attributed to the disposal of approximately 5,500 gallons of ethyl ether in January 1984 by the Federal Drug Enforcement Agency and Dade County.

At the Electroplating Waste Disposal Area, additional analysis showed heavy metals in the ground water at concentrations below allowable maximum levels. Cyanide was detected at 24 ug/L in one monitoring well. Concentrations of sealant metal and cyanide were found in soil and sediment samples. The metal concentrations were comparable to those commonly found in the background soils.

From 1977 to 1982, pesticides were sprayed or dumped onto the Residual Pesticide Disposal Area, and chlorine bleach and ammonia were applied to accelerate the decomposition of the pesticide compounds. Analytical results showed low levels of organochlorine insecticides in surface soil samples. No organochlorine pesticides or chlorinated herbicides were detected in the ground water samples.

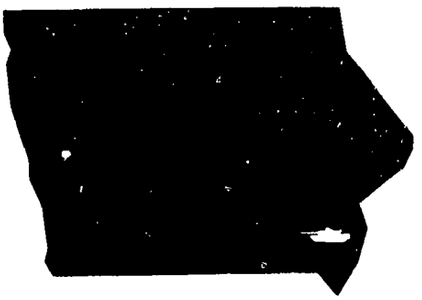
Additional RI/FS investigations to determine the extent of contamination should begin in 1993.

Remedial Design/ Remedial Action (RD/RA)

An IRA was conducted in 1987 to remove approximately 25 USTs from various IRP sites. Construction of a remedial system for Pumphouse 9 was completed in 1991. The system is currently operating at that site to remove free product contamination.

RD/RA work is expected to begin in 1993.

Iowa Army Ammunition Plant (36)
Middletown, Iowa



Service: Army

Size: 19,127 Acres

HRS Score: 29.73

Base Mission: Load-assemble-pack a variety of conventional munitions and fusing systems

IAG Status: Pre-ROD IAG signed 1990 with EPA

Action Dates: First PA/SI completed 1980; Second PA/SI initiated 1991; RI/FS initiated 1981; Placed on NPL 1990

Contaminants: VOCs, heavy metals, waste solvents, explosives containing sludges

Funding to Date: $6.84 million

Preliminary Assessment/ Site Inspection (PA/SI)

Iowa Army Ammunition Plant (IAAP) is a government-owned/ contractor-operated (GOCO) facility. Although a PA/SI was completed in 1980, an update was initiated in January 1991 to further assess the impact on the environment of the use, storage, treatment, and disposal of toxic and hazardous materials and to define conditions that may adversely affect health and welfare or result in environmental degradation. Forty-three sites were addressed as defined by the IAG. Final results are expected in January 1992.

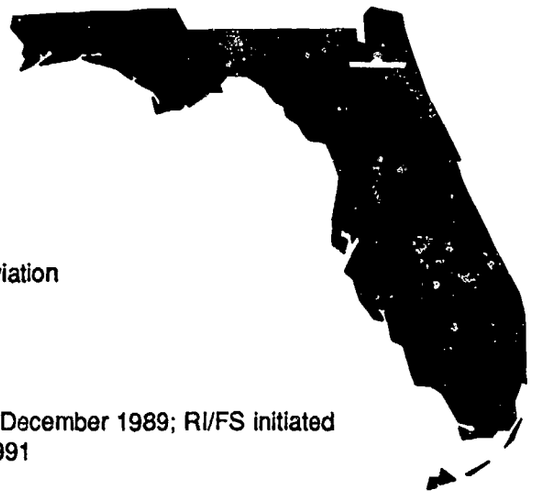
Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in February 1981, and a contamination survey was completed in October 1982. Explosives contamination was found in surface and ground waters within the Brush Creek drainage system. The former Line 1 Impoundment and the Pinkwater Lagoon adjacent to Line 800 were identified as sources of contamination. It was determined that RDX was migrating off-site through Brush and Spring Creeks. A follow-on environmental survey completed in August 1984 assessed further the contamination in the Line 1 and Line 800 areas. The endangerment assessment and FS for Lines 1 and 800 were completed in July and August 1989, respectively. A Federal Facilities Compliance Agreement (FFA) between the Army and EPA was signed in April 1988. An RI/FS is scheduled to begin in March 1992.

Remedial Design/ Remedial Action (RD/RA)

Closure of the inert landfill Trench 5 was completed in November 1989. Closure of the Line 6 gravel filter bed and the drainage ditch was completed in August 1990.

Jacksonville Naval Air Station (37)
Jacksonville, Florida



Service: Navy

Size: 3,820 Acres

HRS Score: 32.08

Base Mission: Provide services and materials for aviation activities and aircraft overhaul

IAG Status: Signed October 1990

Action Dates: PA completed 1985; Placed on NPL December 1989; RI/FS initiated 1989; SI scheduled completion for 1991

Contaminants: Heavy metals, petroleum/oil/lubricants, paints, acids and caustic, phenols, waste solvents, radioisotopes and low-level radioactive radium paint wastes, cyanide

Funding to Date: $4.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA identified 38 sites on NAS Jacksonville. Four additional sites have been identified and added. The SI investigated 19 sites. A TRC has been organized and held its first meeting in May 1989.

Remedial Investigation/ Feasibility Study (RI/FS)

The Navy projects that a minimum of 13 of the 42 sites will be investigated under an RI/FS. An FFA was signed in October 1990. An RI/FS work plan and project management plan were submitted for review in September 1990. NAS is currently a test site for the development and use of the Tri-service Cone Penetrometer project.

Remedial Design/ Remedial Action (RD/RA)

A Removal Action was completed at Site 27, the PCB Transformer Pad, and another at Site 26, the oil/solvent pits.

Joliet Army Ammunition Plant (38)
(LAP Area and Manufacturing Area)
Joliet, Illinois

Service: Army

Size: 36 Square Miles

HRS Score: 35.23 (LAP area)
32.08 (manufacturing area)

Base Mission: Manufacture and load-assemble-pack (LAP) explosives and explosive-filled munitions

IAG Status: Pre-ROD IAG signed June 1989 with EPA and State of Illinois

Action Dates: PA/SI completed 1978; RI/FS initiated 1981; Manufacturing Area placed on NPL 1987; LAP Area placed on NPL 1989

Contaminants: Munitions-related wastes, VOCs, heavy metals

Funding to Date: $11.63 million

Preliminary Assessment/ Site Inspection (PA/SI)

Joliet Army Ammunition Plant (JAAP), consisting of a Manufacturing Area and a Load-Assemble-Pack (LAP) Area, is a government-owned/contractor-operated (GOCO) facility. Since 1977, the facility has been maintained in standby condition.

The PA/SI identified the potential presence of TNT, DNT, RDS, and tetryl, as well as nitric and sulfuric acids, toluene, and various heavy metals. Past practices may have contaminated ground and surface waters, sediment, and soil.

Remedial Investigation/ Feasibility Study (RI/FS)

Investigative studies have centered mainly on 10 areas within the Manufacturing Area and identified various contaminants in the ground and surface water, sediment, and soil. Additional RI/FS activities under the IAG will address 35 potentially contaminated locales in the LAP Area and eight additional locales in the Manufacturing Area. Contaminants from past operations may have migrated offsite through surface water. No indication of contamination of off-post potable water supplies currently exist at this time. Field work for both the Phase 1 LAP Area and Phase 2 Manufacturing Area is scheduled for completion in November 1991. A final report of these activities is due in May 1992.

Remedial Design/ Remedial Action (RD/RA)

In 1985, more than seven million gallons of explosives-contaminated red water were removed from the Red Water Lagoon and transported offsite for disposal. Explosives-contaminated sludge and the lagoon liner also were removed, and the area was capped with clay.

Two surface impoundments in the Manufacturing Area containing ash from past incineration of explosives were recapped in 1985.

No RD/RA for the LAP Area has been developed to date.

Lake City Army Ammunition Plant (39)
(Northwest Lagoon)
Independence, Missouri

Service: Army

Size: 3,955 Acres

HRS Score: 33.62

Base Mission: Manufacture, store, and test small arms ammunition

IAG Status: Pre-ROD IAG signed September 1989

Action Dates: PA/SI completed 1979; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Oils/greases, heavy metals, solvents, explosives

Funding to Date: $28.58 million

Preliminary Assessment/ Site Inspection (PA/SI)

Lake City Army Ammunition Plant (LCAAP) has manufactured, stored, and tested small arms ammunition continuously since 1941, except for a 5-year period following World War II. Virtually all waste treatment and disposal has been onsite. LCAAP has relied heavily on lagoons, landfills, and burn pits for waste disposal. Industrial operations have generated large quantities of potentially hazardous waste, including oils/greases, solvents, explosives, and metals.

The Installation Assessment identified numerous waste areas on base, but because of a clay layer in the soil, no testing was recommended. However, a PA/SI identified 73 waste sites containing more than 100 individual units. These units were later consolidated into 34 sites. Field testing was conducted at seven representative areas and ground water contamination (volatile organics, explosives, and heavy metals) was detected at all seven areas. An RI/FS was recommended for the entire site.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987, and the study confirmed contamination of the ground water above federal and state criteria beneath the entire site. Approximately eight water wells of private residents immediately north of LCAAP have been monitored quarterly since 1987. Low level explosive and volatile organic contamination have been sporadically detected, but levels remain below applicable criteria. Ten additional off-post wells are scheduled to be installed. A Phase 2 RI/FS was initiated in 1989 to determine the extent of ground water contamination and to investigate source locations. A final RI effort is scheduled in 1992 to fill in data gaps from the previous efforts.

Remedial Design/ Remedial Action (RD/RA)

Numerous explosive waste lagoons at LCAAP have been closed since 1986. Air strippers for the drinking water supply wells at the plant were installed in January 1990. Permit applications have been submitted for the other production wells.

Letterkenny Army Depot (40)
(PDO Area and Southeast Area)
Franklin County and Chambersburg, Pennsylvania

Service: Army

Size: 19,511 Acres

HRS Score: 37.51 (PDO Area)
34.21 (SE Area)

Base Mission: Maintain and test tracked vehicles and missiles; Issue chemicals and petroleum; Store, demilitarize, and modify ammunition

IAG Status: Pre-ROD IAG signed February 1989 with EPA and State of Pennsylvania

Action Dates: RI/FS initiated 1982; PA/SI completed 1983; Southeast area placed on NPL 1987; Property Disposal Office Area placed on NPL 1989

Contaminants: Petroleum/oil/lubricants, pesticides, solvents, cleaning agents, metal plating wastes, phenolics, VOCs, painting residues and thinners, explosives

Funding to Date: $16.93 million

Preliminary Assessment/ Site Inspection (PA/SI)

The initial PA/SI included identification of 14 potentially contaminated sites, all targeted for an RI/FS. Significant contamination of ground water by aromatic hydrocarbons and volatile chlorinated hydrocarbons has been found. Elevated levels of contaminants have migrated off-base. An SI was updated for 18 SWMUs during May-July 1990. The SI report was submitted to the EPA and Pennsylvania in March 1991 and is currently being finalized. The SI report recommends further investigation of eight sites.

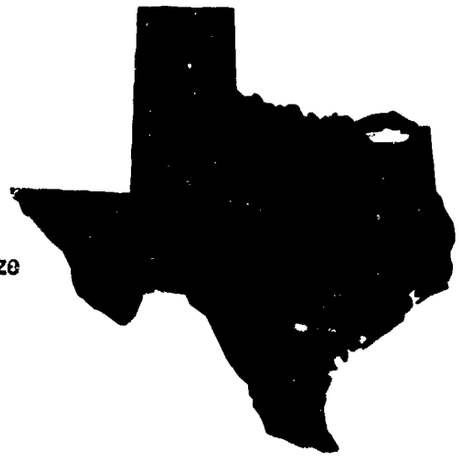
Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in June 1982, and confirmed contamination of 11 areas. Ground and surface waters have been contaminated with chlorinated hydrocarbons, chlorinated organic solvents, toluene, and chloroform. Soils have been contaminated by xylene, heavy metals, chloroform, aromatic and chlorinated hydrocarbons, and chlorinated organic solvents. Organic contaminants have migrated beyond depot boundaries in the southeastern area. Additional field work for the RI/FS is currently being conducted to satisfy regulatory requirements noted during review of pre-IAG RI/FS efforts. A dye study is underway to define contaminant flow. The quality of the ground water at the IWTP lagoon is being assessed under RCRA requirements.

Remedial Design/ Remedial Action (RD/RA)

An alternate water system was provided in September 1987. An ISV system was used to determine the ability of the vacuum system to treat soils. This testing indicated limited potential for the ISV unit because of the site characteristics. Low-temperature thermal stripping is being considered for soil remediation. Ground water treatment also will be considered at both NPL sites. Ground water treatment at the former IWTP lagoon area was initiated in June 1989. The interim ground water treatment system was expanded to nine extraction wells in December 1990. The contract for closure of the lagoon has been awarded, and the closure plan has been approved. Remediation is planned to begin in December 1991. In 1990, approximately 25,00 cubic feet of soils were removed from the Old Fire Training Area. Records of Decision (ROD) were signed in June 1991 for the SE Area, K-Areas, the PPO Area Drum Revetments, and the oil burn pit.

Lone Star Army Ammunition Plant (41)
Texarkana, Texas



Service: Army

Size: 15,546 Acres

HRS Score: 31.85

Base Mission: Load-Assemble-Pack, renovate, and demilitarize ammunition and explosives

IAG Status: Pre-ROD IAG signed June 1990

Action Dates: PA/SI completed 1978; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Munitions-related wastes, heavy metals, petroleum/oil/lubricants

Funding to Date: $4.39 million

Preliminary Assessment/ Site Inspection (PA/SI)

Lone Star AAP is a GOCO plant that employs approximately 2,000 people. Past disposal practices included burial of drummed and undrummed wastes in landfills, wells, and cisterns; disposal of explosives in a demolition area, black powder dump, and burning ground; and the discharge of wastes to chemical sludge ponds, settling pits, unlined pinkwater lagoons, and neutralization ponds. Potential ground water contaminant migration off post could affect approximately 200 private wells located within two miles of the post and used for potable water purposes.

The PA/SI found nitrobodies and heavy metals in manufacturing, disposal, demolition, and lagoon areas and determined the contaminants could migrate beyond plant boundaries through surface and subsurface waters. A follow-on indepth investigation was recommended to determine if contaminants are migrating off-post.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987. A contamination survey investigated 17 areas of potential contamination. Heavy metals and/or explosives were discovered in the ground and surface water and surface soils at several sites. Small concentrations of sulfates, chlorides and dieldrin were also detected in the ground water. Additional investigations conducted in 1990 and 1991 have discovered the potential for off-site contaminant migration. New studies to include off site investigation are planned for 1992 as part of RCRA Facility Investigation (RFI).

The pre-ROD IAG was signed in September 1990. Only the NPL site, the Old Demolition Area (ODA), is covered by this agreement. The remaining sites have been listed as SWMUs. There are 145 SWMUs under investigation.

The Federal and state regulators have completed reviewing the RI/FS for the ODA. Additional investigation was recommended. This investigation is scheduled for completion by July 1992.

Remedial Design/ Remedial Action (RD/RA)

Both Chromic Acid (North G Area) and O-Line (South O Area) ponds have been closed and are being monitored. Leaking underground fuel tanks at the installation gas station have been drained and fueling operations have been moved to another location. Tank removal and soil remediation are scheduled to begin in early 1992.

Longhorn Army Ammunition Plant (42)
Karnack, Texas

Service: Army

Size: 8,493 Acres

HRS Score: 39.83

Base Mission: Load-Assemble-Pack pyrotechnic and illuminating/signal munitions and solid propellant rocket motors

IAG Status: Signed by the Army, EPA, and Texas Water Commission in October 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS initiation 1991; RFA performed 1988; RCRA permit final 1992

Contaminants: Heavy metals, VOCs, munitions-related wastes, petroleum/oil/lubricants

Funding to Date: $1.58 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Longhorn AAP primarily produced 246-TNT flake and acid for munition production during World War II. Flake production ceased and the current mission commenced in 1945.

A PA/SI recommended conducting an environmental survey. A contamination survey and follow-up studies identified contamination of onsite surface and ground water and soils emanating from the Active Burning Ground/Rocket Motor Washout Pond Area, the TNT Production Area, the Flashing Area, the Landfill (old), TNT burial sites, and old Burning Grounds.

An RFA in 1988 identified many of the same sites as SWMUs with a potential for release.

Remedial Investigation/ Feasibility Study (RI/FS)

A preliminary survey confirmed two sources for VOC ground water contamination beneath the Active Burning Ground and identified a third potential source that will require further investigation. The contaminant plume has neither moved significantly in the last 30 years, nor migrated off-post.

The IAG lists 13 areas that will be included in the RI/FS. Investigations at the site will follow CERCLA procedures, but will also incorporate RCRA requirements.

Remedial Design/ Remedial Action (RD/RA)

Capping of the Rocket Motor Washout Pond Area was initiated in 1984. The Texas Water Commission certified the pond clean-closed in 1986.

Loring Air Force Base
Limestone, Maine

(43)

Service: Air Force

Size: 9,000 Acres

HRS Score: 34.49

Base Mission: Headquarters to Strategic Air Command's 42nd Bombardment Wing

IAG Status: Pre-ROD IAG signed January 1991

Action Dates: PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Waste oils, fuels, spent solvents, PCBs, pesticides, heavy metals

Funding to Date: $41.95 million

Preliminary Assessment/ Site Inspection (PA/SI)

Historically, wastes have been burned or buried in landfills. Surface water less than three miles downstream is used for recreational activities and a fresh water wetland is 500 feet from Landfill 3.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in October 1986 disclosed that monitoring wells on-base were contaminated with methylene chloride, TCE, carbon tetrachloride, and barium. The wells are on or downgradient from several widely scattered disposal areas. Two areas are old, adjacent gravel pits that were used for landfill and cover 190 acres. Landfill 2 was used for disposal of hazardous wastes from 1956 to 1974, and Landfill 3 saw similar use from 1974 to the early 1980s. In the 0.5-acre Fire Department Training Area, large quantities of hazardous materials were disposed of through landfilling until 1968. From 1968 to 1974, these materials were disposed of by burning. The 600-acre flightline area, with its industrial shops and maintenance hangars, was a primary generator of hazardous waste on-base. While some generated wastes were disposed of on the ground or in storm and sewer drains in the area, most wastes were disposed of elsewhere. Soils in the flightline area also contain significant amounts of fuel, oil, and various VOCs. An estimated 1,200 people obtain drinking water from wells within three miles of hazardous substances on-base. The nearest (non-potable) well is less than 500 feet from the location of buried transformers. According to the 1986 IRP report, water in the flightline drainage ditch, a 2,500-foot portion of a tributary to Greenlaw Creek, is contaminated with methylene chloride, tetrachloroethylene, 1,1-TCA, TCE, and iron. The ditch receives storm water discharges from several sewers draining the flightline area and the nose dock area, both locations where fuels were handled.

Remedial Design/ Remedial Action (RD/RA)

An RA was initiated in 1989. Remedial actions in 1990 included contaminated soil and UST removals. Remedial actions in 1991 included contaminated soil treatment, UST removals, and landfill capping. Remedial Actions for 1992 will involve further contaminated soil treatment and free product removal.

Louisiana Army Ammunition Plant (44)
Doyline, Louisiana

Service: Army

Size: 14,974 Acres

HRS Score: 30.26

Base Mission: Load-Assemble-Pack operations; Manufacture shell metal parts

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1978; RI/FS initiated 1985; Placed on NPL 1989

Contaminants: Oils, grease, degreasers, phosphates, solvents, metal plating sludges, acids, flyash, TNT and RDX explosives

Funding to Date: $38.19 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Louisiana Army Ammunition Plant (LAAP) is owned by the government and is operated by the Thiokol Corporation. LAAP currently employs 1,680 people.

The PA/SI concluded that the explosive loading and disposal areas of the plant were heavily contaminated with explosive wastes, primarily TNT, RDX, and tetryl. In addition, sumps and unlined ponds in the metal parts production area were contaminated with waste from plating and fabrication operations. No explosives were found in the surface water leaving the installation. In addition, no indication of contaminant migration off the installation through ground or surface waters was found. The high potential for future migration of the explosive contamination, however, resulted in a recommendation for a water quality monitoring program.

Remedial Investigation/ Feasibility Study (RI/FS)

The first stage of the RI/FS work consisted of a preliminary contamination survey completed in 1982. The actual RI/FS began 1985 with a follow-on RI completed in 1987. The investigations indicated that no off-post migration had occurred. On-post wells, however, were contaminated with explosives, including TNT, RDX, and HMX. The contaminated ground water had reached the southern boundary, so as part of a follow-on RI, four wells were installed off the southern boundary of the installation in 1988.

Remedial Design/ Remedial Action (RD/RA)

Incineration of explosives-contaminated soil and treatment of contaminated surface water in Area P began in 1987. The incineration of 102,000 tons of soils and the treatment of 50 million gallons of pinkwater was completed in March 1990. Closure activities and revegetation of the site were completed during the fourth quarter of 1990.

A 1989 analysis indicated that the explosives-contaminated ground water had migrated off the southern boundary. Consequently, two 6-month ground water monitoring programs were completed between 1989 and 1991; no contamination was found. Monitoring of these 16 drinking water wells will continue.

Luke Air Force Base
Glendale, Arizona

(45)

Service:	Air Force
Size:	4,198 Acres
HRS Score:	37.93
Base Mission:	Advanced fighter training
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1990
Contaminants:	Petroleum/oil/lubricants, VOCs
Funding to Date:	$9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Luke AFB is located in the Sonoran Desert and rests on a broad alluvium-filled valley within the western portion of the Phoenix Basin. The PA/SI conducted in 1982 identified a number of potentially contaminated areas, including five sites where hazardous wastes were disposed of. These five sites were subsequently investigated in 1983 and 1986 as part of the IRP. Additional sites were later identified for investigation.

Remedial Investigation/ Feasibility Study (RI/FS)

Two old fire training sites in bermed areas were used to simulate aircraft fire by burning POL wastes. Below surface, soil borings contained elevated levels of oil and grease, and low levels of volatile organics. These findings prompted a pre-design study to determine the extent of contamination and gather the requisite information for conducting a soil vapor extraction pilot study and the subsequent removal action. Three ground water monitoring wells were installed, one presumed to be upgradient and two downgradient. The water table was measured at 360 feet below ground surface. No significant contaminants were detected. In addition, the waste treatment annex landfill was discovered eroding from the banks. An inspection was conducted and stabilization action was executed in March 1991.

Remedial Design/ Remedial Action (RD/RA)

RAs to date include closing a former waste oil and contaminated JP-4 fuel storage site. The subject tanks were removed and the area was capped with concrete. Monitoring wells are in place. In addition, the leaking UST at the base service station was removed. Soil vapor extraction is planned for the North Fire Training Area. A treatability study was completed in January 1991. A bank stabilization project to prevent further erosion of a landfill into the Aqua Fria River was completed in early 1991.

March Air Force Base
Riverside, California

(46)

Service: Air Force

Size: 7,000 Acres

HRS Score: 31.94

Base Mission: Aircraft maintenance and repair; Refueling operations; Training activities

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: VOCs, heavy metals

Funding to Date: $26.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Soils on March AFB are contaminated with organics and metals and primary ground water contaminants are TCE and perchloroethylene (PCE). An estimated 11,600 people obtain drinking water from municipal wells within three miles of hazardous substances on March AFB. The base also is adjacent to light industrial, agricultural, and residential areas.

As part of the PA/SI, the Air Force investigated 42 potentially contaminated sites. The sites included three fire training areas, seven inactive landfills, underground solvent storage tanks, an engine test cell, and spills. Significant contamination was found at seven sites. Three regions of ground water contamination beneath the base also were identified.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS efforts are currently underway. On-base Well No. 1 was contaminated with TCE, tetrachloroethylene, and cis-1,2dichloroethylene at levels that exceed state drinking water standards. Therefore, Well No. 1 was taken out of service. Ground water concentrations range from 170 ppb PCE and 110 ppb TCE on base, to 15 ppb TCE in one off-base private well. The private well owner has been provided with bottled drinking water. An RI/FS status report, completed in 1991, divided March's IRP sites into three operable units (OU) for better tracking and grouping of contaminants. It also provided suggestions and recommendations for ground water monitoring well locations, contaminant tests required and types of treatment procedures and processes to be used for specific contaminants based on site characteristics. Activities will continue in the three operable units according to the basewide work plan developed under the requirements of the pre-ROD IAG.

Remedial Design/ Remedial Action (RD/RA)

Activities supporting system design for removing TCE from ground water at six sites began in 1989. RD/RA activities in 1990 included the removal of the Panero hydrant fueling system, contaminated soil treatment, and pumping and treating free product beneath the removed hydrant fueling system. During 1990 and 1991, activities continued for free product removal and soil treatment at the Panero site. The installation of a ground water treatment system began at Landfill No. 6. Planned RD/RA activities for 1992 include further contaminated soil treatment and free product removal at the Panero site, Swimming Pool Fill (Site 17) and Engine Test Cell (Site 18) RD and RA, and the removal of Hawes UST.

Marine Corps Logistic Base (47)
Albany, Georgia

Service: Navy

Size: 3,327 Acres

HRS Score: 44.65

Base Mission: Supply center; Training center

IAG Status: Signed July 2, 1991

Action Dates: PA/SI completed 1985; Placed on NPL 1989; RI/FS initiated 1989

Contaminants: Waste oil and fuels, solvents, mineral spirits, PCBs, paints and thinners, stripping compounds, DDT, cleaning solutions

Funding to Date: $2.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified eight potential contamination sites, six of which were recommended for confirmation studies. Sites included landfills, a storm sewer and canal, and a leaking drum storage area. Nine sites are being addressed under the SI.

Ten sites have been added following the RFI. Twenty-one sites are being addressed under an RI/FS.

Remedial Investigation/ Feasibility Study (RI/FS)

Phase I of the corrective action RFI was completed for nine sites during 1989. The RFI results will be used for the RI. Old sludge drying beds are currently being corrected under RCRA. A drawdown test was performed on the recovery well that extracts water from the contaminated Upper Ocala Aquifer. A conceptual design was then completed for the recovery system. At the Industrial Waste Treatment Plant (IWTP), quarterly ground water monitoring continues as part of the RCRA corrective action.

The fourth meeting of the TRC was held on October 31, 1991. The Department of the Navy, EPA, and Georgia Environmental Protection Division negotiated and signed an FFA in 1991.

Remedial Design/ Remedial Action (RD/RA)

Five recovery wells have been installed at the IWTP and the old sludge drying beds were capped.

Mather Air Force Base
Sacramento, California

(48)

Service:	Air Force
Size:	5,934 Acres
HRS Score:	28.90
Base Mission:	Electronic Warfare Officer Training; Navigator Training
IAG Status:	Pre-ROD IAG signed 1989 with EPA and State of California
Action Dates:	PA completed 1982; RI/FS initiated 1984; Placed on NPL 1989; SI completed 1990
Contaminants:	Solvents, cleaners, VOCs, plating wastes
Funding to Date:	$33.86 million

Preliminary Assessment/ Site Inspection (PA/SI)

Water quality analyses of drinking water in wells on and near the base indicate the presence of TCE and other solvents in the shallow ground water system. In 1979, drinking water contamination was first discovered when sampling from the production well at the Aircraft Control and Warning (AC&W) area confirmed the presence of TCE. To date, ground water contamination has been confirmed at the AC&W Site, the 7100 Area (southwestern corner of the base), and the West Ditch (western border of the base). Both the 7100 Area and West Ditch are suspected of causing off-base contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

The IRP at Mather AFB is currently being conducted at the AC&W Sites, the Group 2 Sites and the Group 3 Sites. The RI at the AC&W Sites was completed in March 1991, with the FS completed in July 1991. The FS report recommended ground water remediation at the site. A draft Record of Decision (ROD) for the AC&W Sites is due in December 1991.

The RI and the FS included in the Group 2 Sites is underway, with the draft reports due in 1992. It is anticipated many of these sites will not require remediation, but extensive ground water contamination in three areas of the base will likely require ground water removal and treatment.

The RI at the Group 3 Sites has begun, with a draft report due in November 1992. The sites consist mainly of oil/water separators and are expected to require limited if any remediation.

Remedial Design/ Remedial Action (RD/RA)

Bottled water was provided to off-base residents in 1986 while construction of a water line could be completed from the base water supply to the affected residents. In 1989, six residences and a 33-unit trailer park were connected to a local municipal water main.

Remedial Design at the AC&W Site is in progress. Once the ROD is signed, a site remediation schedule will be negotiated and included in the Federal Facility Agreement (FFA). It is expected that construction at the site will be complete in 1993, with treatment of the ground water continuing for at least seven years.

Remedial actions will be required at several other sites. Schedules for remediation will be negotiated after the RODs are signed.

McChord Air Force Base (49)
(Wash Rack/Treatment Area—WTA)
(American Lake Garden Tract—ALGT)
Tacoma, Washington

Service: Air Force

Size: 4,616 Acres

HRS Score: WTA – 42.24
ALGT – 31.94

Base Mission: Airlift services to troops, cargo, equipment, passengers, and mail

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1986; RI/FS in ALGT completed 1991; RI/FS in WTA initiated 1990 and ongoing; Agreement with State signed in July 91 for 29 non-NPL sites

Contaminants: ALGT – Chlorinated solvents; WTA – Fuel constituents; Non-NPL – Fuel, hydraulic fluid, oils, solvents, paints, acids, pesticides, metals

Funding to Date: $15.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

Almost 500,000 gallons of hazardous substances have been used and disposed of on-base.

The PA identified 62 sites and recommended further action at 34 of them. SIs identified shallow aquifer contamination. The base, and over 10,000 people within three miles of the base, depend upon the aquifers for their drinking water.

The current number of sites is 64 and includes sites with no further action needed, non-NPL sites, sites within two NPL locations, and one "site" to track UST removals.

Remedial Investigation/ Feasibility Study (RI/FS)

The ALGT RI/FS was initiated in May 1987 and completed in March 1991. Low-level concentrations of trichloroethylene migrated in the shallow aquifer to the north and west into the off-base ALGT.

Further RI/FS work was initiated in 1991 for 38 sites.

Remedial Design/ Remedial Action (RD/RA)

RAs were initiated in 1988 to cleanup POL-contaminated soil at Site 63. The ALGT ROD specifies hookups to the new potable water system the Air Force installed in the ALGT in 1986. RD work for a ground water pump and treat system at this site is scheduled to begin in 1992. The RA should begin in 1993 and continue for at least 30 years.

McClellan Air Force Base
Sacramento, California

(50)

Service: Air Force

Size: 2,950 Acres

HRS Score: 57.93

Base Mission: Logistics for aircraft, missile, space, and electronics programs

IAG Status: Pre-ROD IAG signed 1990 with EPA and State of California

Action Dates: RI/FS initiated 1984; Placed on NPL 1987

Contaminants: Organic solvents, metal plating wastes, caustic cleaners/ degreasers, paints, waste lubricants, photochemicals, phenols, chloroform, spent acids and bases, PCB-contaminated oils

Funding to Date: $72.78 million

Preliminary Assessment/ Site Inspection (PA/SI)

Since a 1979 Air Force study first detected ground water contamination, several on-base and off-base wells have been closed. Approximately 23,000 people in the area depend on the ground water for domestic and agricultural use. PA/SIs conducted since 1981 have identified a total of 177 sites. The soil and ground water contamination at McClellan AFB are primarily the result of chemical releases from land disposal facilities used for disposal of liquid, sludges, and solid wastes; discharges and accidental spills at various industrial activities and storage areas; and leakage from sumps, underground storage tanks, and industrial waste lines.

Remedial Investigation/ Feasibility Study (RI/FS)

As a management solution for the efficient implementation of the RI/FS, the sites were grouped into eight operable units (OU). A CERCLA work plan was developed to implement the RI/FS at each operable unit. The RI/FS for the entire base is expected to be completed by the year 2002. RI work is underway in Operable Unit B, located in the southwest section of the base. Basewide investigation to define the extent of ground water contamination is also underway. Ground water contamination is primarily in the shallow aquifer 120 feet below ground surface, but has migrated to 390 feet in depth at some locations.

Remedial Design/ Remedial Action (RD/RA)

Several cleanup actions have been completed. The Air Force provided approximately 348 residents with hookups to an alternate water source at a cost of $3.5 million, and a carbon filtration system has been installed for base well #16. Eleven sites have been capped, and ground water extraction systems have been installed at two operable units. The extraction systems are connected to a $3.8 million ground water treatment plant. A contaminated building (Building 666) was dismantled and removed for a cost of $3 million.

In FY 1991, an expedited action was completed near the old Building Site 666 to contain a ground water plume and prevent future degradation of a base water supply well located on the southwest edge of the base. An additional ground water extraction system is planned for installation on the southwest edge of the base during 1992.

Milan Army Ammunition Plant (51)
Milan, Tennessee

Service: Army

Size: 22,544 Acres

HRS Score: 58.15

Base Mission: Load-Assemble-Pack, ship, and demilitarize explosive ordnance

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1978; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Munitions-related wastes, heavy metals, organic solvents, paints, thinners, acids

Funding to Date: $6.87 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Milan Army Ammunition Plant (MAAP) is a GOCO facility owned by the government and operated by Martin Marietta. MAAP presently employs 1,600 people.

A PA/SI concluded that the demolition areas, wastewater lagoons, burning grounds, draining ditches, and streams were contaminated with explosive wastes in addition to zinc, chromium, iron, sulfates, and phosphates. Of 11 MAAP water supply wells sampled in November 1978, explosive contaminants were found in three wells near the O-Line Lagoon area. These three wells subsequently were taken out of service.

Remedial Investigation/ Feasibility Study (RI/FS)

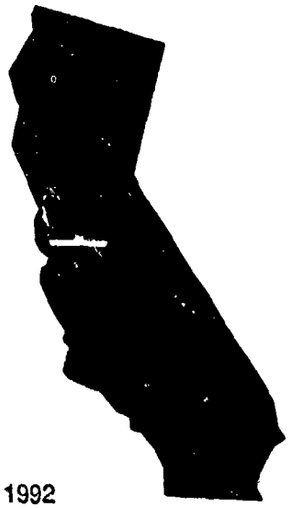
A two-phase survey completed in 1983 concluded that MAAP ground and surface waters were contaminated with TNT, DNT, and RDX. Contamination was moving toward the plant boundaries; ground and surface waters at the installation boundaries contained mercury at levels exceeding Federal EPA water quality criteria. Ground and surface waters within MAAP contained lead and chromium, but migration studies were inconclusive. The major sources of contamination identified were the O-Line Lagoons, the explosives-burning ground, the ammunition destruction area, and drainage ditches associated with these areas. Regular sampling and analysis of existing wells continue. A formal RI/FS process for the O-Line Lagoons was initiated in 1988. A contract to perform an RI at the O-Line Lagoons, the open burning grounds, and 17 other SWMUs was awarded in April 1989 and completed in July 1991. RDX was detected in the Milan City wells in May 1991 at levels below 2 ppb. Follow-on RI work will be conducted to determine the source and nature of the ground water contamination.

Remedial Design/ Remedial Action (RD/RA)

The O-Line Lagoons were capped and seeded with grass in December 1984. Areas of suspected residual explosive contamination of surface soils were excavated. Additional wells to monitor leaching of contaminants into ground water have been installed. Post-closure maintenance of grounds and fences continues. If necessary, further RD/RA activities will be initiated after the completion of the RI/FS.

Moffett Naval Air Station
Sunnyvale, California

(52)



Service: Navy

Size: 3,919 Acres

HRS Score: 24.49

Base Mission: Training for air/patrol squadrons and antisubmarine warfare; Headquarters for Commander Patrol Wings of Pacific Fleet

IAG Status: Pre-ROD IAG signed as amended in 1990 with EPA and State of California

Action Dates: PA completed 1984; Placed on NPL 1987; RI/FS initiated 1988; SI completed 1989; RI scheduled for completion 1992

Contaminants: Metal plating wastes, PCBs, waste oil and fuels, painting residues, organic solvents, caustics, coolants, pesticides, asbestos, freon, dyes

Funding to Date: $33.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Approximately 272,000 people depend on wells located within three miles of Moffett Field as sources of drinking water. The estuarine wetlands of San Francisco Bay are adjacent to the base.

A PA/SI identified nine sites as potential contaminant migration sources and eight sites were targeted for an RI/FS. The potential effect of contaminant migration on the regional aquifer system was documented, as was the chlorinated hydrocarbon contamination of a shallow onsite aquifer.

Remedial Investigation/ Feasibility Study (RI/FS)

Nineteen sites currently are being investigated under an RI/FS, including nine identified in the PA/SI and 10 additional sites incorporated as a result of a Cease and Desist Order to Moffett Field by the California Regional Water Quality Control Board. RI/FS work plans were finalized in March and April 1988. The RI has been conducted in two phases. Phase I of the RI started in May 1988 and Phase II began in November 1989. Upon completion of Phase I, sites that have been sufficiently characterized and require no additional Phase II work will be evaluated so that Operable Unit RAs can be conducted.

Remedial Design/ Remedial Action (RD/RA)

A removal action to address leaking tanks and sumps was initiated in 1990. The evaluation and closure of abandoned wells that may be potential conduits for subsurface cross-contamination also were initiated in 1990. A pump-and-treat system design was completed for Site 14 in October 1991 and construction of the system is scheduled for completion in 1992.

Mountain Home Air Force Base (53)
Mountain Home, Idaho

Service: Air Force

Size: 9 Square Miles

HRS Score: 57.80

Base Mission: Tactical Air Command; Tactical Fighter Wing, with F-111A fighter and EF-111A electronic countermeasure operations

IAG Status: Initiated and expected to be signed 1992

Action Dates: PA/SI completed 1986; RI/FS initiated 1985; Placed on NPL 1990

Contaminants: VOCs, petroleum/oil/lubricants, heavy metals

Funding to Date: $3.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Mountain Home AFB has been controlled by the Tactical Air Command since 1965. Hazardous materials and wastes have been used and generated at Mountain Home for aircraft maintenance and industrial operations. Prior to 1969, base wastes were disposed of by several then-accepted methods, including incineration and landfilling of solid wastes, discharge of liquid wastes to sanitary sewers, and the use of waste oil for road oiling. The area around the base is primarily agricultural, and wells supporting 6,000 people and land irrigation are three miles from hazardous substances on base.

During the PA/SI, the Air Force identified potentially contaminated areas where POL products, solvents, and pesticides were disposed of. These sites subsequently were investigated in 1985 and 1988 as part of the IRP.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field studies were conducted in 1985 and 1988. The lagoon landfill, where general refuse and POL products were disposed of between 1952 and 1956, is currently the site for the base wastewater lagoon. Monitoring wells installed near the center of the landfill detected lead and cadmium in the ground water. In 1988, soil, surface, and ground water samples were collected and analyzed for metals, volatile and semi-volatile organics, and total petroleum hydrocarbons. Any compounds detected within these media were within MCLs for drinking water. To determine whether any contaminants have reached the interlayers between the lagoon and the water table, monitoring wells have been installed and sampled.

Waste oils, fly ash, solvents, jet fuel, tank cleaning sludge, and possibly 20 drums of DDT were placed in trenches and burned or covered with fill. Soil and ground water samples were analyzed for metals, organics, and petroleum hydrocarbons. Organics and petroleum hydrocarbons were detected in shallow soil samples, but no vertical migration was evident in soils or ground water. Additional efforts have been made to locate and sample additional disposal trenches, including DDT drums. An FS to evaluate remedial action alternatives for the fire training area will be finalized. The USGS is conducting a ground water study in support of the RI/FS to assist with the characterization of the complex ground water system.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work is planned for 1992 at the fire training area. An IRA is planned at the low-level radioactive waste disposal site to reduce the threat of contaminant migration.

Naval Air Development Center (54)
Warminster Township, Pennsylvania

Service: Navy

Size: 921 Acres

HRS Score: 57.93

Base Mission: Research and development for naval aircraft systems, antisubmarine warfare systems, and software

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1981; Proposed for NPL 1986; RI/FS initiated 1988

Contaminants: VOCs, metal plating wastes, painting residues, PCB-contaminated waste oils, fuels, solvents, asphalt, coolants

Funding to Date: $942,000

Preliminary Assessment/ Site Inspection (PA/SI)

Numerous private and public wells are located within three miles of the installation and provide drinking water for more than 100,000 people. Local surface water is used for recreational and industrial purposes. A PA/SI identified eight sites as potential contaminant migration sources recommended for an RI/FS. Chromium and lead were found in surface waters. Chromium, DCE, and TCE were discovered in onsite wells at levels above EPA water-quality standards. Ground water monitoring continues.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed. Eleven TRC meetings have been held since January 1989. The community relations plan was completed and forwarded to EPA in June 1990. The RI/FS work plan was completed in June 1990. Implementation of the work plan began with the collection of first round of samples in October 1990.

Twenty-nine new ground water monitoring wells were installed in November 1990. Ground water sampling from a total of 46 wells at the site was completed in December 1990.

A second round of samples will begin in early FY 1992. A Remedial Investigation (RI) report and Risk Assessment will be developed based on both sets of sampling data. A list of alternative solutions, ending with a feasibility study (FS) is expected by September 1992.

Remedial Design/ Remedial Action (RD/RA)

Remediation of underground storage tanks was conducted during 1989 and 1990. Initiation of RD/RA work is expected in 1993.

Naval Air Engineering Center (55)
Lakehurst, New Jersey

Service:	Navy
Size:	7,382 Acres
HRS Score:	50.53
Base Mission:	Develop and test weapons systems
IAG Status:	Pre-ROD IAG signed 1989 with EPA
Action Dates:	PA/SI completed 1983; Placed on NPL 1987; RI/FS initiated 1987; RI Phase II completed 1990
Contaminants:	Waste oils and fuels, solvents, degreasers, paints, paint residues, photographic chemicals, acids, PCBs, pesticides, herbicides, refrigerants
Funding to Date:	$10.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

An extensive, environmentally sensitive pineland preservation that supports recreational, wildlife, and agricultural uses surrounds Lakehurst Naval Air Engineering Center (NAEC). Nearby communities use a shallow aquifer adjacent to the base for drinking water.

A PA/SI identified 45 potentially contaminated sites, and an RI/FS is considering 43 of these sites.

Remedial Investigation/ Feasibility Study (RI/FS)

Completed RI/FS field work confirmed contamination at several sites, although analysis of potable well water showed no evidence of contamination. A final report was completed in July 1990. In addition, initial screening under the FS for 16 priority sites continues. Aquifer characterization was conducted in 1990.

Sites were grouped into six "categories" to expedite remediation. Several categories are in the "Interim Remedial Action" (IRA) phase, consisting of pump and treat systems, while others have had Records of Decision (RODs) signed, indicating no further action. These IRA sites, as well as the remaining sites, will continue through Phase III field investigations and reports starting October 1991. Completion of this phase of the work is scheduled for February 1992.

A TRC has been formed. Members include EPA Region II; New Jersey Department of Environmental Protection; New Jersey Pineland Commission; Ocean County Health Department; Town of Manchester; Town of Jackson; Township of Plumstead; Borough of Lakehurst; NAEC Lakehurst; and Northern Division, Naval Facilities Engineering Command.

Remedial Design/ Remedial Action (RD/RA)

Ground water treatment has been initiated in 1990 and is expected to continue in 1992. Additional RD/RA work is expected over the next several years. A ROD covering all sites is scheduled for completion in January 1993.

Naval Air Station, Whidbey Island (56)
(Ault Field & Sea Plane Base)
Whidbey Island, Washington

Service: Navy

Size: 7,000 Acres

HRS Score: 47.58 (Ault Field)
39.64 (Sea Plane Base)

Base Mission: Provide services and materials for aviation operations

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1984; Placed on NPL 1990; RI/FS initiated 1988

Contaminants: VOCs, petroleum/oil/lubricants

Funding to Date: $14.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Ground water is used extensively for water supply throughout much of Whidbey Island. Contaminant migration could occur through ground and surface waters.

A PA/SI identified 51 past spill and/or disposal sites, with 39 sites targeted for an RI/FS. A Current Situation Report completed in January 1988 determined that surface water runoff may have contaminated sediment and biota in nearshore areas around the island, and that contaminants from several sites could migrate in ground water. An accelerated initial investigation completed in September 1989 at the Site 6 Landfill found chlorinated solvents in the shallow aquifer. The contaminants appear to have migrated just beyond the edge of government property. Private wells tested around the property in 1989 were unaffected by the landfill contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

The FFA signed September 17, 1990, groups the 39 RI/FS sites into five operable units to be investigated and remediated in phases. A TRC has been formed with representatives of NAS, Whidbey Island; Engineering Field Activity Northwest, Naval Facilities Engineering Command; EPA Region X; ATSDR; State of Washington Department of Ecology; Island County Emergency Services; Citizens Ground Water Advisory Committee; Oak Harbor Citizens; and Navy contractors.

RI/FS work at three of the operable units was funded in 1991. It will involve well installation, sample collection and analysis, and completion of the RI/FS report for these operable units.

Remedial Design/ Remedial Action (RD/RA)

Remediation of underground storage tanks was conducted during 1990 and 1991. An IRA at the Site 6 landfill is being planned. Initiation of RD/RA work is expected in 1993.

Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota

(57)

Service: Navy

Size: 83 Acres

HRS Score: 30.83

Base Mission: Design and manufacture advanced weapons systems

IAG Status: Signed March 1991

Action Dates: PA/SI completed 1988; RI/FS initiated 1988; Placed on NPL November 1989; Record of Decision for ground water remediation September 1990

Contaminants: Heavy metals, VOCs, petroleum/oil/lubricants

Funding to Date: $6.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The northern portion of the Naval Industrial Reserve Ordnance Plant (NIROP) is government-owned, but operated by a private contractor (FMC). The remainder of the facility is owned independently by FMC. Highly permeable sands, conducive to the downward migration of contaminants, lie below the facility. Underlying these sands, the potable water in aquifers is susceptible to contamination. These aquifers, in turn, discharge into the Mississippi River, which supplies the potable water for Minneapolis. The water supply intake for Minneapolis is located approximately one mile downstream from the NIROP.

Three sites identified as potential contaminant migration sources were recommended for an RI/FS. A series of investigations performed between November 1983 and June 1988 identified TCE in the ground water. The plant discontinued using TCE during the first quarter of 1987. NIROP was listed on the NPL in November 1987.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed. Members include EPA Region V; Northern Division, Naval Facilities Engineering Command; Minnesota Pollution Control Agency; USACE, Omaha District; County of Anoke; City of Fridley; FMC, Inc.; MWCC; and NIROP Fridley. A three-party Federal Facilities Agreement between the Navy, EPA and the State of Minnesota was signed in March 1991.

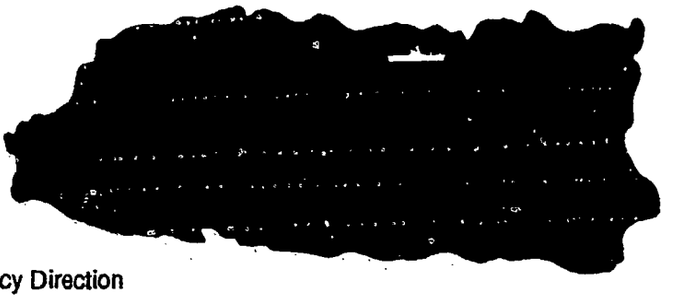
Remedial Design/ Remedial Action (RD/RA)

Interim Removal Action involved removal and disposal of 1,200 cubic yards of soil and 43 drums containing PCB wastes, flammable solids, and base solids. This effort, initiated in 1983, was completed in 1984 at a cost of $733,000.

The Navy recommended and EPA and the Minnesota Pollution Control Agency approved, installation of a treatment and disposal system for ground water. A ROD for ground water remediation was issued in September 1990.

The RD for the first phase of cleanup was completed in 1991. The RA is scheduled to begin in early 1992 with the construction of drawdown wells and piping to remove contamination from the ground water.

Naval Security Group Activity (58)
Sabana Seca, Puerto Rico



Service: Navy

Size: 2,252 Acres

HRS Score: 34.28

Base Mission: Operation of High Frequency Direction Finding Facility

IAG Status: Negotiated and expected to be signed early 1992

Action Dates: PA/SI completed 1988 for Sites 4, 6 and 7; PA/SI initiated 1991 for sites 1, 2 and 3; RI/FS initiated 1988 for sites 4, 6 and 7; Placed on NPL 1990

Contaminants: Pesticides, herbicides, paints, oils, solvents

Funding to Date: $1.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past disposal methods in landfills created the potential for soil and ground water contamination. Ground water is the potable water supply for the base. Spillage of herbicides and pesticides, and the rinsing of application equipment, have contaminated the areas adjacent to the pesticide shop. Sightings of endangered wildlife have been reported in numerous locations.

A PA identified seven potentially contaminated sites. Originally, only two sites, the former pesticide shop (Site 6) and the leachate ponding area (Site 7), were recommended for an SI. The source of the leachate at Site 7 is the municipal landfill adjacent to the Station boundary. The pistol range disposal area's (Site 4) proximity to Site 7, and recent information on Bunker 607 disposal area (Site 2) mandated that an SI be conducted. As a precautionary measure, SIs shall be conducted at the South and North Stone Road Disposal Areas (Sites 1 and 3). Since Wenger Road Disposal Area (Site 5) was cleaned up in 1984, no further studies will be required. The PA/SI has been completed for Sites 4, 6, and 7. The PA/SI for Sites 1, 2 and 3 is expected to be completed in 1992.

Remedial Investigation/ Feasibility Study (RI/FS)

Sample analyses indicate that soils are contaminated at Site 6, the Former Pest Control Shop, but no ground water contamination has been detected at this site. The leachate contamination at Site 7 originates at an offsite source (the municipal landfill). However, its inclusion in the scope of the RI/FS is a precautionary measure to protect the base water supply. The Navy will continue to pursue legal avenues with regard to the migration of contamination onto the Station. Additional rounds of sampling for Sites 4, 6, and 7 are expected to be conducted during 1991-2 to complete the RI and begin the FS. Depending upon the results from the SI at Sites 1, 2 and 3, any one or all sites may be recommended for RI/FS work efforts.

A TRC held its first meeting in January 1989. Several meetings were held during 1990 when the documentation for Site 6 had been completed. Several meetings will be held throughout the life of this project.

Remedial Design/ Remedial Action (RD/RA)

In 1988, the Navy installed a fence around the Former Pest Control Shop (Site 6) and covered the site with 6 inches of soil to prevent human exposure to spilled pesticides. RD/RA work will begin after completion of RI/FS activities.

Naval Undersea Warfare Engineering Station (59)
Keyport, Washington

Service: Navy

Size: 4,959 Acres

HRS Score: 32.61

Base Mission: Prove, overhaul, and issue torpedoes

IAG Status: Pre-ROD IAG signed July 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1985; Placed on NPL October 1989

Contaminants: Metal plating wastes, solvents, cleaners/degreasers, paint residues, thinners, strippers, waste oils and fuels, acids and caustics, dyes, contaminated fuel solids and rinsewaters, pesticides

Funding to Date: $8.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified nine sites as potential contaminant migration sources. Six sites were identified for further study. The study concluded that past disposal practices may have contaminated portions of a shallow aquifer and adjacent marsh. Potential offsite contamination of bay and marsh sediments may impact the marine environment.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS currently underway should be completed in 1992. Marine sampling of water, sediment, and shellfish tissue was completed in 1989. Land-based sampling consisting of soil, gas, air, surface, and ground water began in April 1990.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected to begin in 1992.

Naval Weapons Station, Earle (Site A) (60)
Colts Neck, New Jersey

Service: Navy

Size: 11,134 Acres

HRS Score: 37.21

Base Mission: Ammunition, logistics and administrative support for home-ported ships

IAG Status: Signed February 16, 1991; Effective May 16, 1991

Action Dates: Placed on NPL August 1990; PA/SI completed 1986; RI/FS initiated 1988

Contaminants: Heavy metals, petroleum/oils/lubricants, organic solvents, degreasers, paint residues, corrosive acids

Funding to Date: $1.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Both the ground water system beneath the Colts Neck facility and the surrounding surface waters are used extensively by public and private interests. Runoff from any on-base contamination threatens public health and the environment.

A PA identified 29 potentially contaminated sites, and an SI was completed in 1986 for two explosive ordnance disposal sites, five landfills, two paint chip disposal sites, an air pollution control residue spill site, and an explosive washout area. An SI for 16 of the remaining 18 sites is expected to begin in 1992. The other two remaining sites are a demilitarization furnace and a cyclone dust storage area. These are addressed as current operations under RCRA corrective actions and are not included in the IR Program.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI work plan for 11 sites has been prepared. The RI field work began in January 1991. In October 1988, the Navy held the first TRC meeting. Members include NWS Earle; Northern Division, Naval Facilities Engineering Command; EPA Region II; State of New Jersey Department of Environmental Protection; Monmouth County Health Department; and Howell and Middletown Townships.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1994.

New London Submarine Base (61)
Groton, Connecticut

Service: Navy

Size: 547 Acres

HRS Score: 36.53

Base Mission: Homeporting submarines; Submarine intermediate maintenance and repairs; Submarine training; Submarine medical research

IAG Status: Initiated and expected to be signed in 1992

Action Dates: IAS completed 1983; RI/FS field plan completed 1990; Placed on NPL August 1990

Contaminants: Pesticides, fuel oil, construction rubble, spent acids, incinerator ash, solvents, paints, PCBs

Funding to Date: $2.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Initial Assessment Study (IAS) identified 16 potentially contaminated sites and recommended further investigation at four sites. Potential contaminant migration represents a threat to the Thames River, a fishing source and recreational area.

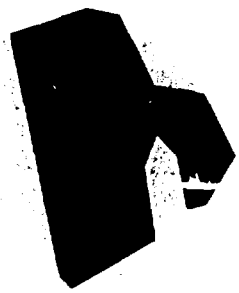
Remedial Investigation/ Feasibility Study (RI/FS)

The field work began in July 1990. The work plan includes five RI sites and six SI sites. A TRC was formed in 1989 and members include the Navy, Connecticut Department of Environmental Protection, EPA Region I, Town of Groton, City of Groton, Town of Waterford, City of New London, the Town of Ledyard, and interested citizens of those communities. The combined SI and RI draft report was submitted to the TRC in August 1991. This report recommended three of the six SI sites for no further action. The remaining three will proceed to RI. The five RI sites are recommended for FS. Two additional sites have been discovered and added to the program.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. Hazardous wastes were removed from the area in 1991.

Newport Naval Education & Training Center Newport, Rhode Island (62)



Service: Navy

Size: 1,400 Acres

HRS Score: 32.25

Base Mission: Logistics support; Training center

IAG Status: Initiated and expected to be signed in 1992

Action Dates: PA/SI completed 1984; RI/FS initiated 1988; Placed on NPL November 1989

Contaminants: Paints, oils, spent acids, solvents, PCB-contaminated soil

Funding to Date: $2.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Migration of contaminants pose a potential threat to the underlying aquifer. Surface drainage and ground water from potentially contaminated sites flow directly into the Narragansett Bay. Such potential contamination could adversely affect shellfish harvested for human consumption.

A PA/SI identified 18 potentially contaminated sites. Nine sites exhibited sufficient evidence to warrant further studies.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS work plan was completed for five sites in March 1989. A TRC has been formed and meetings have been held since April 1988. TRC members include NewPort NETC; Northern Division, Naval Facilities Engineering Command; Rhode Island Department of Environmental Management; EPA Region I; Cities of Portsmouth, Middletown, and Newport; Narragansett Bay project representatives; and Melville Marine Industries. In July 1990, the community relations plan was issued for NETC Newport. Field work for the RI/FS work plan was completed in November 1990. The draft RI report was completed in November 1991 and is undergoing TRC review. The Federal Facility Agreement between the Navy, EPA and RIDEM is in the draft final stage.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. Hazardous materials were removed from the area during 1989 and 1991.

Norton Air Force Base
San Bernardino, California

(63)

Service: Air Force

Size: 2,003 Acres

HRS Score: 39.65

Base Mission: Military Airlift Command Base

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Waste oils and fuels, solvents, paint strippers and residues, refrigerants, acidic plating solutions, metal plating residue

Funding to Date: $18.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified several sites of potential contaminant migration. Sites targeted for an RI/FS included two landfills, six discharge areas, four chemical pits, a fire training area, a fuel spill area, a PCB spill area, a chemical spill area, two waste storage areas, an UST area, and a low-level radioactive waste burial site. After additional study, two more sites were identified in 1987.

Remedial Investigation/ Feasibility Study (RI/FS)

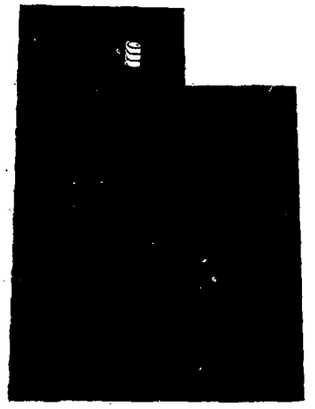
Initial investigations found that soils at several sites were contaminated with solvents, fuel derivatives, and metals. An IAG between the installation and the regulatory community was signed as required by CERCLA. Deadlines for meeting critical milestones toward final remediation have been established and coordinated with EPA and the state. The final ROD is due in September 1993. An RI/FS effort is underway to characterize all sites, with drafts expected in 1992. In addition, a comprehensive RI/FS work plan (strategy plan) has been developed. A draft RI/FS work plan was submitted to EPA and the state for review prior to finalization in 1990. A comprehensive ground water plan also was provided.

Remedial Design/ Remedial Action (RD/RA)

A removal action was taken in 1985-86 to clean up the on-base IWTP sludge drying beds. A ground water pump-and-treat system is being installed to remediate TCE contamination in the central portion of Norton AFB and prevent further TCE migration. In 1989, a total of 26 USTs were removed. Removal of underground storage tanks and surrounding contaminated soils continues.

Ogden Defense Depot
Ogden, Utah

(64)



Service: Defense Logistics Agency

Size: 1,139 Acres

HRS Score: 45.10

Base Mission: Electronic equipment, industrial construction equipment, textiles, package petroleum, and industrial/commercial chemicals distribution

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1980; Placed on NPL 1987; RI/FS initiated 1987; ROD OU #1 signed 1990; RD/RA OU #1 initiated 1991

Contaminants: Solvents, paint/paint residues, petroleum/oil/lubricants, insecticides, chemical warfare agents (mustard and phosgene gas training kits), methyl bromide, metal plating wastes/sludges, PCB-transformer oils, degreasers, acids and bases, sand-blast residues

Funding to Date: $7.32 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 44 sites as potential contaminant migration sources. The PA/SI has been completed for all 44 sites. Twenty-two were studied further under the RI/FS. These 22 sites were divided into four Operable Units (OUs) and nine contamination study areas.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987 when ground water monitoring wells were installed and soil borings were taken at 17 locations. Sampling of soil and ground water has confirmed concentrations of benzene, TCE, vinyl chloride, trans-1,2-DCE, cis-1,2-DCE, methylene chloride, chlordane, zinc, cadmium, barium, toluene, tetrachloroethene, and chromium above the established federal MCLs. Ground water contamination has been limited to the shallow aquifer because of the current geological conditions at the site. The FFA identifies four OUs. A ROD will be developed for each unit. The first DLA ROD was signed in September 1990 to allow official startup of cleanup activities at OU #2. RI/FS reports were completed for all OUs during 1991 and contamination site study areas. All 22 sites have completed the RI/FS phase.

Remedial Design/ Remedial Action (RD/RA)

Vials of mustard agents and irritant grenades were removed from disposal pits in June 1988. Remedial design was completed at OU #1 and OU #2 during 1991. RD/RA activities were initiated at OU #1 during 1991.

Otis Air National Guard Base/
Camp Edwards
Falmouth, Massachusetts

(65)

Service: Air Force

Size: 22,000 Acres

HRS Score: 45.92

Base Mission: Provide Army and Air National Guard training, East Coast Air Defense, and Coast Guard Air/Sea Rescue

IAG Status: Pre-ROD IAG signed July 1991

Action Dates: Placed on NPL 1989

Contaminants: Waste solvents, emulsifiers, penetrants, photographic chemicals, VOCs

Funding to Date: $21.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Otis Air National Guard Base (ANGB), Camp Edwards (ARNGB), U.S. Air Force, U.S. Coast Guard and Veteran's Administration cover approximately 22,000 acres of what is known as the Massachusetts Military Reservation (MMR) in Falmouth, Barnstable County, Massachusetts. The area is not heavily populated. Although the occupants and property boundaries have changed since the facility was established in 1935, the primary mission has been to provide training and housing for air and ground military units. In 1982, the Air National Guard (ANG) conducted an initial PA at Otis ANGB and identified seven sites requiring further study.

In 1984, the USGS detected a plume of contaminated ground water which extended two miles to the south of the treatment plant. In 1983 and 1984, volatile organic compounds (VOCs) were detected in on-site IRP monitoring wells near the Base landfill and current fire training area. In 1986, a PA was performed on the entire installation. Forty-two potential hazardous waste sites were recommended for further study. This includes 21 sites on ANG facilities, 15 sites on ARNG facilities and six sites on USCG facilities. The sites include fire training areas, coal storage areas and motor pool areas. The waste products associated with the identified areas include waste solvents, waste fuels, and chlorinated solvents. SIs have been completed on 19 sites.

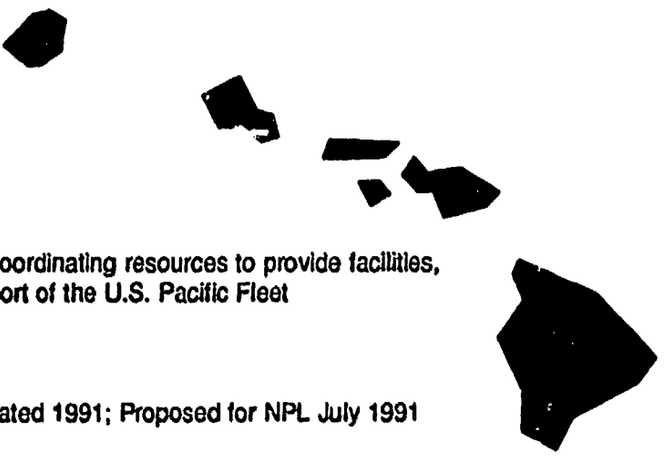
Remedial Investigation/ Feasibility Study (RI/FS)

In FY 1991, the sites were prioritized and RIs were initiated at priority sites. Wells have been installed along the southern border of the base to detect any contamination possibly migrating off-base from the sites into the towns of Falmouth and Mashpee. Ground water contamination from the landfill has been detected flowing toward the town of Bourne. No contamination has been detected flowing toward the town of Sandwich on the northern border of the base.

Remedial Design/ Remedial Action (RD/RA)

The ANG reimbursed the City of Falmouth for installing new water lines in 1986-87 to the affected residences and replacing a city well. In 1989, additional water lines were installed in three affected areas in the Ashument Valley. Falmouth, MA was compensated for installation of water lines in Ashument Valley because a plume from Otis Sewage Treatment Plant caused the closure of private wells. Mashpee, MA will be compensated for water lines installed in the Briarwood area because of contamination from MMR. During 1991, removal of contaminated liquids and sediments began on two projects to prevent further ground water contamination.

Pearl Harbor Naval Complex (66)
(Proposed for Listing on the NPL)
Pearl Harbor, HI



Service: Navy

Size: 6,300 Acres

HRS Score: 70.82

Base Mission: Serve as area commander in coordinating resources to provide facilities, services, and materials in support of the U.S. Pacific Fleet

IAG Status: IAG not yet initiated

Action Dates: PA completed 1983; RI/FS initiated 1991; Proposed for NPL July 1991

Contaminants: Waste oils, pesticides, heavy metals, PCBs, solvents

Funding to Date: $10.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA conducted in 1983 identified 31 potential sources of hazardous substances. Since then, additional sources have been identified. The Complex currently has 22 sites requiring further action. Most sites are located close to Pearl Harbor shoreline waters. Some sites are located near drinking water wells and wetlands. The potential exists for migration of contaminants to receptors or resources of concern.

Remedial Investigation/ Feasibility Study (RI/FS)

The proposed listing of Pearl Harbor Naval Complex on the NPL was based on the aggregate scoring of six sites within the area: Pearl City Peninsula Landfill, Former Gyro Shop, PCB Disposal Storm Drain at Building 68, Pickling Shop Waste Disposal, Makalapa Pesticide Rinseate Pit, and Aiea Laundry Shop. All sites are not contiguous. The activities affected by the proposed NPL action include Shipyard Pearl Harbor, Public Works Center Pearl Harbor, Submarine Base Pearl Harbor, Naval Station Pearl Harbor, Naval Supply Center Pearl Harbor, and Inactive Ships Detachment Pearl Harbor.

A RI/FS was initiated in September 1991 at some of the higher priority sites. Other sites will be investigated as funds become available and requirements are negotiated with EPA and the State. Integration of RCRA and underground storage tank requirements with the NPL action is anticipated. Operable units will probably be established to manage the investigation and cleanups. A Technical Review Committee has been established and convened to review actions at the sites. A community relations plan is currently being developed. The Navy anticipates that an FFA will be initiated in 1992. More details concerning the implications of the NPL action will be established during FFA negotiations.

Remedial Design/ Remedial Action (RD/RA)

While the RI/FS is in progress, removal actions will be undertaken when appropriate to expedite the cleanups. Removal actions will include the excavation and disposal of solvent-contaminated soil and the recovery of fuel products from the brackish ground water. During 1991, over 100 cubic yards of PCB-contaminated soil were removed from a transformer site near a school playground. Initiation of RD/RA at some sites is expected in 1994.

Pease Air Force Base

Portsmouth/Newington, New Hampshire

(67)

Service:	Air Force
Size:	4,365 Acres
HRS Score:	39.42
Base Mission:	Aircraft maintenance
IAG Status:	Pre-ROD IAG signed 1991
Action Dates:	PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990
Contaminants:	Organic solvents, pesticides, paint strippers, petroleum products
Funding to Date:	$35.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Pease AFB is commercial-residential. The base abuts a tidal estuary called Great Bay that leads to Little Bay three miles downstream, which is used for both shellfishing and recreational activities. Both coastal and fresh water wetlands are along surface water migration pathways from the base.

An estimated 9,000 people obtain drinking water from public and private wells within three miles of the base.

Sites identified during a 1986 study included seven landfills, two areas where waste oil and solvents were burned for fire training exercises, and four areas where solvents and other liquid wastes were discharged on the ground. All hazardous wastes generated on-base currently are disposed of offsite at EPA-regulated facilities.

A second PA was conducted in 1990 to satisfy IAG requirements. A total of 35 sites have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

Tests conducted in 1977 determined that a well supplying drinking water to 8,700 people on-base was contaminated with TCE. An RI/FS was initiated in September 1987. According to a 1988 IRP report, traces of heptachlor and lindane were found contaminating surface water along the surface runoff pathway from one of the landfills. Lead and zinc were found in sediments of three major drainage ditches on-base. The base holds an NPDES permit for the discharge of treated wastewater into the Piscataqua River.

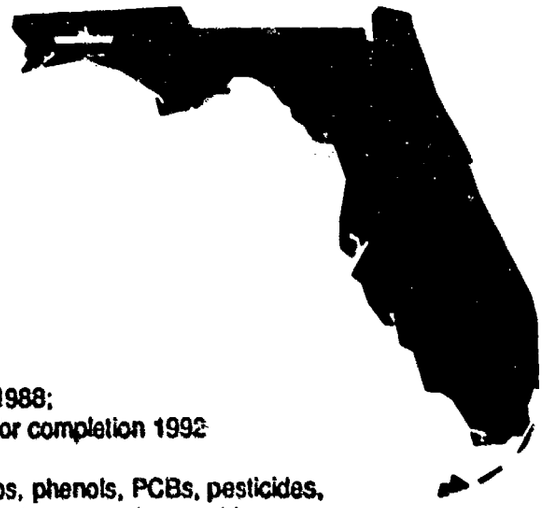
Additional RI/FS work is currently underway. The RI for all sites is scheduled to be completed by 1993.

Remedial Design/ Remedial Action (RD/RA)

In 1984, an aeration system was installed to remove TCE from all base water supply wells. The TCE levels are no longer detectable, so the system has been discontinued.

Removal of EOD items such as spout flares and starter cartridges was completed in 1991. Removal of most underground storage tanks and contaminated soils have been completed. An interim remedial action involving the installation of a ground water pump-and-treat system is also scheduled to be installed in early 1992 to facilitate lease and/or transfer of flightline properties.

Pensacola Naval Air Station (68)
Pensacola, Florida



Service: Navy

Size: 5,969 Acres

HRS Score: 42.40

Base Mission: Flight training; Naval Air Depot

IAG Status: Pre-ROD IAG signed October 1990

Action Dates: PA completed 1983; RI/FS initiated 1988; Placed on NPL 1990; SI scheduled for completion 1992

Contaminants: Paints, metal plating wastes, asbestos, phenols, PCBs, pesticides, chlorinated and non-chlorinated solvents, ammonia, cyanide

Funding to Date: $10.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past disposal practices included burning in unlined pits; depositing in disposal areas; storing aviation gas in fuel tanks; and discharging liquid wastes to industrial sewers, sanitary sewers, and surface impoundments.

The PA was completed in 1983 by the Naval Energy and Environmental Support Activity. An initial SI was conducted in 1984 followed by an extended SI completed in 1986.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS began in December 1988 in conjunction with the RFI. A contract was awarded for the development of SI work plans for all sites (SWMU and IRP sites) at Pensacola NAS. Draft work plans were submitted to EPA Region IV in May 1989.

Eleven work plans were finalized in 1990 for Phase I field work. Five Phase II work plans were submitted for review and comment by the regulatory agencies.

The first meeting of the TRC was held in January 1989. Navy, EPA, and Florida Department of Environmental Regulation drafted an FFA. Signatures occurred in October 1990. The FFA identifies 37 potential sources of contamination for further investigation and appropriate corrective action. The last TRC was held in July 1991 to discuss the interim data reports on the first 10 sites' Phase II reports. The next TRC meeting is scheduled for January 1992 to discuss the remaining Phase I draft work plans.

Remedial Design/ Remedial Action (RD/RA)

A ground water recovery system has been operating since January 1987 at the IWTP complex. The recovery system will replace the existing centrifugal pumps with submersible pumps and drawdown protectors as required by the new Hazardous Waste Facility Permit received in September 1991. Impoundments at Site 33 underwent formal closure under RCRA in 1989.

Plattsburgh Air Force Base (69)
Plattsburgh, New York

Service:	Air Force
Size:	3,440 Acres
HRS Score:	30.34
Base Mission:	Tactical Wing of Strategic Air Command; Provide Combat Crew training and NCO Leadership School
IAG Status:	Signed 1991
Action Dates:	PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990
Contaminants:	Organic solvents, PCBs
Funding to Date:	$20.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Toluene, TCE, 1,1,1-TCA, methylene chloride, and 1,2-dichloroethane are present in drainage ditches in areas where solvents and jet fuels were spilled. Tests conducted in 1987 found MEK, TCE, and trans-1,2-dichloroethylene in two shallow monitoring wells downgradient from a drum storage area. An estimated 2,000 people obtain drinking water from wells within three miles of the base.

EPA evaluated eight hazardous waste accumulation or disposal sites and four spill areas to develop the HRS score for Plattsburgh AFB.

An additional PA/SI will be conducted in 1992 as required by the IAG.

Remedial Investigation/ Feasibility Study (RI/FS)

Plattsburgh AFB prepared and is implementing a basewide RI/FS work plan.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities for 1991 included remedial actions for the DDT spill site located at the DRMO facility, and for the fire training area. Two landfill closure actions will be awarded in 1992, with construction beginning shortly afterward. Also, a removal action at Building 1034 is planned for 1992. Incineration will be used to dispose of the waste after removal. Additional RAs may be implemented based on the results of the RI/FS.

Riverbank Army Ammunition Plant (70)
Riverbank, California

Service:	Army
Size:	172 Acres
HRS Score:	63.94
Base Mission:	Grenade and projectile steel cartridge casings manufacture
IAG Status:	Pre-ROD IAG signed April 1990
Action Dates:	PA/SI completed 1980; RI/FS initiated 1981; Placed on NPL 1990
Contaminants:	Cyanide, zinc, chromium wastes
Funding to Date:	$10.77 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Riverbank Army Ammunition Plant (RBAAP) is a GOCO facility currently employing approximately 150 persons. Past operations have contaminated the ground water beneath the plant with cyanide and chromium wastes and the off-post potable water supply used by approximately 70 residents.

A PA/SI identified potentially contaminated sites, including the IWTP, an abandoned landfill, and four evaporation/percolation (E/P) ponds located 1.5 miles north of the plant near the Stanislaus River.

Remedial Investigation/ Feasibility Study (RI/FS)

Chromium contamination has been traced to past operation of the IWTP. The abandoned landfill is the source of cyanide contaminants. Both chromium and cyanide have entered the ground water aquifers beneath the plant. Their migration off-post affects the potable domestic water supply. Sampling domestic supply wells off-post is conducted quarterly. The E/P ponds contain zinc concentrations above California limits for surface impoundments. The RI report was conditionally approved in August 1991 pending completion of additional sampling at the landfill and IWTP off-load area. FS efforts were initiated in November 1991.

Remedial Design/ Remedial Action (RD/RA)

In response to finding chromium contamination above state limits, off-post domestic supply wells at five residences were replaced with deeper wells. Construction of an interim ground water treatment system was completed in December 1990 and was placed under 24-hour operation in September 1991. The system is achieving a 99 percent removal of hexavalent chromium and cyanide.

Remedial measures initially scheduled for 1991 to reduce the zinc concentrations in the E/P ponds have been delayed. The recommended alternative use of the zinc-rich sediments as an agricultural soil amendment was determined to be nonexecutable because the sediments would have to be regulated as a hazardous waste. Other alternatives are being evaluated for implementation in 1992. An Action Memorandum for installation of a waterline to off-post residences was approved in September 1991. The waterline will be installed in 1992.

Robins Air Force Base
(Landfill #4/Sludge Lagoon)
Houston County, Georgia

(71)

Service:	Air Force
Size:	8,855 Acres
HRS Score:	51.66
Base Mission:	Aircraft logistics
IAG Status:	Pre-ROD IAG signed 1989
Action Dates:	PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1987
Contaminants:	VOCs, paint strippers and thinners, paints, solvents, phosphoric and chromic acids, oils, cyanide, carbon remover
Funding to Date:	$18.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Robins AFB is located in the Coastal Plain of Georgia and includes a 1,200-acre wetland. Units of the highly permeable Cretaceous Aquifer lie beneath the base. Although the water supplies for the Base and City of Warner Robins are derived from this aquifer, the ground water flow and contaminant migration appear to be in an easterly direction, away from all wells and the city. Trichloroethylene and tetrachloroethylene have been detected in ground water. Thirty-three sites on base may contain hazardous waste from past disposal activities.

Ground water contamination with a high potential for contaminant migration was detected at three sites. Two areas covering 465 acres comprise the NPL site: Landfill #4, and an adjacent sludge lagoon, which contains phenols and metal plating wastes. Additional sites have been added since 1986 through identification by the Base and the Georgia EPD during survey work for the Part B Permit.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1986. The sites have been grouped into eight zones. In Zone 1, contamination of ground and surface water and sediments by organic solvents and metals was confirmed. In Zone 2, ground and surface water contamination was detected. In Zone 3, high levels of petroleum products, TOX, and BTEX were found. In Zone 4, ground water contamination by TOX and BTEX was detected. In Zone 5, solvents were found. No significant contamination was detected in Zone 6. In Zone 7, TCE, petroleum hydrocarbons, and lead were found. Zone 8 had one soil sample test positive for PCBs.

Another RI/FS began in 1988 to address sites which include construction debris landfills, ground water contamination areas, and several disposal areas.

Remedial Design/ Remedial Action (RD/RA)

Several USTs were removed and water supply wells were replaced in 1987. Removal of pesticide contaminated soil in Zone 2 will begin in 1992. The remedial designs for Zones 3 and 5 are being accomplished with corrective actions scheduled to begin in 1992. The RD for the NPL site Zone 1 began in June 1991. A total of 16 sites are to be closed during 1991.

An IRP master plan has been approved for Robins AFB for 1988 through 1992. The plan is a work document to consider contaminant sources, migration, and the development of remedial alternatives.

Rocky Mountain Arsenal
Adams County, Colorado

(72)

Service: Army

Size: 17,228 Acres

HRS Score: 58.15

Base Mission: Decontamination and cleanup of real estate, facilities, and equipment

IAG Status: Pre-ROD IAG Federal Facilities Agreement established 1989

Action Dates: RI/FS initiated 1984; PA/SI completed 1985; Placed on NPL 1987

Contaminants: Pesticides; mustard gas and nerve agents; mercury; lead; arsenic; organic and inorganic chlorides; hydroxides and fluorides; diisopropylmethylphosphonate dichloropentadiene; dibromochloropropane; solvents; acids; methyl isobutylketone; sulfur bearing organic and inorganic compounds

Funding to Date: $414.69 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Army completed a material contamination survey in August 1973 and an installation assessment in March 1977. These studies identified 19 areas potentially contaminated with heavy metals, chemical agents, incendiaries, and industrial wastes.

Remedial Investigation/ Feasibility Study (RI/FS)

The cleanup program at Rocky Mountain Arsenal (RMA) is divided into two operable units (OUs), on-post and off-post. RMA completed the final off-post RI Report in 1989 and the final on-post RI report in 1990. An RI Addendum to the off-post OU was completed in 1991. Both on-post and off-post Human Health Exposure Assessments, which represent the second of four key steps in the Integrated Endangerment Assessment (EA) for RMA, were completed in 1991. The FS for the on-post OU is underway and scheduled for completion in 1993. It involves the review of more than 200 technologies in preparation for the detailed analysis of remedial alternatives.

Remedial Design/ Remedial Action (RD/RA)

The FFA calls for 13 IRAs to contain contamination sources, reduce the extent of contaminant migration, and decrease the cost of the final remediation. All IRAs have been initiated, with many completed. Recharge trenches have been installed at the North Boundary System and short-term improvements have been made to the Northwest Boundary System. Two new intercept and treatment systems located north of Basin F and in the Basin A neck area have been completed. Engineering design for a new intercept and treatment system located off-post, north of RMA has also been completed. Approximately 10.5 million gallons of liquid and 500,000 yards of contaminated soil were removed at Basin F with the liquids placed in tanks and ponds, and the soil placed in a waste pile. The Decision Document for destruction of the 10.5 million gallons of Basin F liquids has been finalized.

In FY 1991, a contract was awarded for the cleanup and dismantling of the Hydrazene Blending and Storage Facility, closing of over 350 abandoned wells, closing old and deteriorating sections of the sanitary sewer, and removal or encapsulation of asbestos, and the assessment of "other contamination source" IRAs. Completed actions include interception and treatment of TCE and Dibromochloropropane contaminated ground water at the Motor Pool and Rail Classification Yard Areas, construction of a slurry wall around and capping over disposal trenches, soil vapor extraction of TCE in the Motor Pool area, and monitoring of complex disposal trenches. Additional actions are planned for the future.

Sacramento Army Depot (73)
Sacramento, California

Service: Army

Size: 485 Acres

HRS Score: 44.46

Base Mission: Depot for electronics materials; Manufacture parts

FFA Status: Pre-ROD FFA signed 1988 with EPA and State of California

Action Dates: PA/SI completed 1979; OU/RI/FS initiated 1984; Placed on NPL 1987

Contaminants: Waste oil and grease, solvents; metal plating wastes; wastewaters containing caustics, cyanide, metals

Funding to Date: $25.49 million

Preliminary Assessment/ Site Inspection (PA/SI)

The 1979 PA/SI identified several industrial areas and spill/disposal sites as potential sources of contaminant migration. A follow-on investigation conducted under the operable unit (OU) RI/FS addressed these potential sources of contamination.

An enhanced PA was subsequently conducted to determine all environmental issues that need to be addressed Base Realignment and Closure (BRAC) 1991. The assessment included records reviews, evaluation of ongoing environmental studies, and a site visit.

Remedial Investigation/ Feasibility Study (RI/FS)

Several OUs at SAAD have been identified that may require response actions. Four of the OUs were recommended for Feasibility Studies with the other OUs to be addressed in an overall site FS. The on-going ground water monitoring program has detected contamination both on and off site, primarily low levels of TCE. Metals have also been found in the Old Morrison Creek sediments near the Oxidation Lagoons. Sampling and analysis of soil under a 1,000-gallon UST, known as Tank 2 OU, indicate that VOCs, PAHs and pesticides exist in the area. There are also several areas that were identified in the original PA/SI that do not warrant further action. A No-Action ROD is being prepared for these areas.

Remedial Design/ Remedial Action (RD/RA)

The SAAD ROD for the south post ground water contamination was signed in September 1989 by the Army, the Sate of California, and the EPA IX Regional Administrator. SAAD constructed a ground water well extraction system and an ultra-violet light hydrogen peroxide (UV/Peroxidation) treatment plant which began operations in November 1989. The IRA is intended to prevent ground water contamination from migrating beyond SAAD boundaries and to treat organic solvent contaminated ground water under the former burn pits. The plant has successfully treated over 110 million gallons to date.

The ROD addressing soil contamination for the Tank 2 OU was signed by the Army in October 1991 and is being reviewed by EPA IX and California. SAAD has awarded a contract to design and construct a soil vapor extraction treatment system equipped with air pollution controls to remediate organic solvent soil contamination.

A remedial action removal contract was awarded September 1991 to design and construct a treatment system to remove heavy metals contamination from the former oxidation lagoons. SAAD has awarded a soil washing treatment system to extract the inorganics from the soil. A Record of Decision is currently being prepared for the soil washing unit.

Savanna Army Depot Activity (74)
Savanna, Illinois

Service: Army

Size: 13,062 Acres

HRS Score: 42.20

Base Mission: Depot for munitions and explosives; Manufacture and store chemicals

IAG Status: Pre-ROD IAG signed 1989 with EPA and State of Illinois

Action Dates: PA/SI completed 1979; RI/FS initiated 1980; Placed on NPL 1989

Contaminants: Munitions-related wastes

Funding to Date: $13.51 million

Preliminary Assessment/ Site Inspection (PA/SI)

Three potable water sources near Savanna Army Depot and the shallow aquifer five meters below may be contaminated. Lagoons adjacent to the Mississippi River also could contaminate these drinking water sources. Surface contamination could affect the large wintering population of bald eagles. The PA/SI initially identified 59 potentially contaminated sites and these sites later were consolidated into 45 sites. Local munitions-related contamination was detected in sediments of the TNT washout-area leaching-pond, and in ground water on base.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS, initiated in September 1980, identified and confirmed the extent and concentration of ground water and soil contamination in the lagoon sediment. The lagoons leached TNT and other chemicals to the ground water. Sampling of selected ground and surface water sites in 1988 determined the extent of contaminant migration. The IAG-mandated RI commenced in October 1989. The May 1990 site characterization summary increased the number of potentially contaminated sites to 72. Environmental sampling at 26 sites recommended by EPA and Illinois EPA commenced in 1990.

Additional investigatory effort was required under the RI in 1991 by the regulatory agencies.

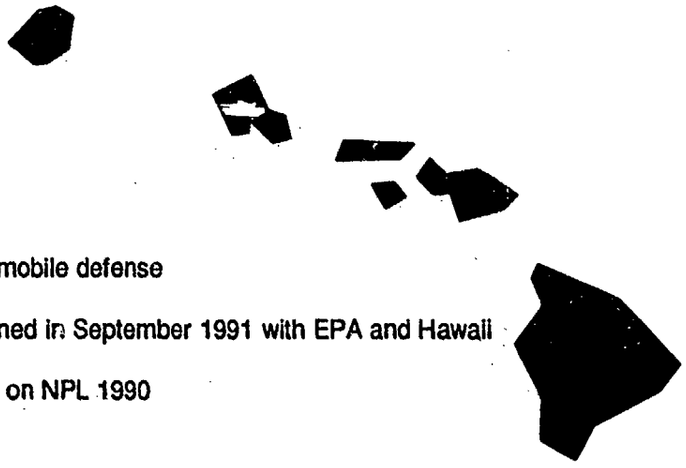
Remedial Design/ Remedial Action (RD/RA)

Incineration of TNT-contaminated soils at the lagoons are scheduled for 1992. The incineration remedial action is expected to proceed as an operable unit.

Schofield Barracks

Oahu, Hawaii

(75)



Service:	Army
Size:	17,725 Acres
HRS Score:	28.90
Base Mission:	Home for Army's Oahu island mobile defense
IAG Status:	Federal Facility Agreement signed in September 1991 with EPA and Hawaii
Action Dates:	PA/SI completed 1984; Placed on NPL 1990
Contaminants:	Organic solvents
Funding to Date:	$1.01 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA was conducted in 1984. Pesticide storage, burning ground, washrack activities, and paint filter disposal activities were cited as possible sources that could contaminate the municipal landfill. No evidence of ground water contamination was found at the time of the PA.

In April 1985, the Army informed the Hawaii Department of Health that high levels (30 ppb) of TCE contaminated wells supplying drinking water to 25,000 people at Schofield Barracks. The federal MCL for TCE is 5 ppb.

A PA/SI and initial RI scoping effort was initiated in 1991 for operable units (OU) 1, 2 and 4 to detail efforts required to locate the TCE source and to gather data needed to support remedial actions at the installation.

Additional PA/SI efforts are planned in 1992 for OU 3.

Remedial Investigation/ Feasibility Study (RI/FS)

In September 1986, the Army began removing TCE from contaminated wells on base to ensure safe drinking water. This interim response action will be modified as required, based upon findings of the upcoming RI/FS. RI/FS activities for OU #1, #2 and #4 will be initiated following completion of the RI scoping effort initiated in 1991. All RI/FS efforts will be conducted under the FFA between the Army, EPA and Hawaii. RI efforts will be planned as warranted for OU #3 upon completion of the PA/SI efforts.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Currently, ground water treatment is performed in place with granulated activated carbon (GAC) for removal of TCE from ground water for the drinking water supply at Schofield Barracks.

Seneca Army Depot
Romulus, New York

(76)

Service: Army

Size: 10,600 Acres

HRS Score: 35.52

Base Mission: Receive, store, distribute, maintain, and demilitarize conventional ammunition, explosives, and special weapons

IAG Status: Initiated and expected to be signed in 1992

Action Dates: PA/SI completed 1989; RI/FS scoping initiated 1990; Placed on NPL 1990

Contaminants: Chlorinated organic solvents, heavy metals

Funding to Date: $3.59 million

Preliminary Assessment/ Site Inspection (PA/SI)

Seneca Army Depot employs approximately 700 civilian and 300 to 400 military employees. Chlorinated organic solvents from the incinerator ash landfill have been detected in ground water on post and in seasonal surface seeps off post. Occupants of a farmhouse near the field where the seeps occur may be receptors. No private wells are affected. Soils in the open burning/open detonation (OB/OD) ground are contaminated with heavy metals that apparently do not migrate.

The PA/SI identified the potential for ground water contamination at the incinerator ash landfill and recommended an SI. The SI confirmed off-post migration of contaminated ground water and identified several source areas within the landfill.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS scoping activities began in 1990 for the landfill and for the OB ground. The work plan for both projects were approved in October 1991 and field work at both sites has begun. These investigations will characterize contaminant source areas, define the extent of contamination, and evaluate health risks.

Remedial Design/ Remedial Action (RD/RA)

RD/RA is anticipated to begin in 1993. Actual initiation is dependant upon regulatory considerations throughout the RI/FS process.

Sharpe Site, Defense Distribution Region West (formerly Sharpe Army Depot) Lathrop, California

(77)

Service: Defense Logistics Agency

Size: 720 Acres

HRS Score: 42.24

Base Mission: Depot for general supplies

IAG Status: Pre-ROD IAG signed 1989 with EPA and State of California

Action Dates: PA/SI completed 1980; RI/FS initiated 1984; Placed on NPL 1987; Ground water RI completed 1991

Contaminants: VOCs

Funding to Date: $14.37 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sharpe employs 1,200 people. Wastes have been landfilled or buried onsite. The PA/SI indicated contamination from landfilling in the north and south ends of the depot, in areas referred to as the north balloon and south balloon because they are encircled by a railroad turnaround. The study identified contaminants in the burning pits and burial sites in the central area of the depot. The PA/SI found solvent wastes, predominantly TCE, contaminating soil and ground water in the area.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in July 1984. The complexity and extent of site contamination and the intense regulatory oversight have necessitated two separate RI sampling operations. The final RI for all sites at Sharpe was approved by the regulatory agencies in July 1991. The RI documents the extent of ground water and soil contamination. The primary contaminant is TCE. Approximately 24,000 yards of TCE-contaminated soil is present. TCE levels up to 20,000 ug/L have been measured. The California allowable level for TCE is 5 ug/L. TCE from Sharpe Depot also has contaminated ground water off post. The draft FS for ground water contamination was submitted in FY 1991 and is expected to become final in December 1991. The draft FS for soil will be submitted in January 1992.

Remedial Design/ Remedial Action (RD/RA)

Sharpe has constructed two interim ground water treatment systems. The first system is located in the South Balloon Area and began operating in March 1987. The second system is located in the North Balloon Area and began operating in October 1990. The North Balloon system requires upgrading which is scheduled for 1992. RD/RA for a third and final ground water plant will begin in 1992. A treatability test of in-situ volatilization for soils was conducted in 1991. It was a success. Extended tests are planned for 1992.

Tinker Air Force Base
Oklahoma City, Oklahoma

(78)

Service: Air Force

Size: 5,001 Acres

HRS Score: 42.24

Base Mission: Worldwide repair depot for aircraft, weapons, and engines

IAG Status: Pre-ROD IAG signed 1988

Action Dates: PA/SI completed 1982; RI/FS initiated 1983; Placed on NPL 1987

Contaminants: Organic solvents, heavy metals

Funding to Date: $43.71 million

Preliminary Assessment/ Site Inspection (PA/SI)

Tinker Air Force Base is located within the drainage area of the North Canadian River Basin of central Oklahoma. Two tributaries for this basin are Crutcho and Kuhlman Creeks, which run through the base proper. The base sets on the recharge zone for the large and productive Garber-Wellington Aquifer, a major potable water source for the base and surrounding communities. Cleaning of aircraft parts and engines over the past 45 years within Building 3001 has resulted in ground water contamination of this major water supply with organic solvents (TCE and 1,2-DCE). To date, three drinking water wells within or adjacent to Building 3001 indicate a contamination plume, within the shallow water zone, of 220 acres. This plume is moving north and northwest and is a possible contamination for the base and 75,000 non-base users of this water source.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS phase commenced in September 1983 and has been completed on three wells, Landfill 3, North Fuel Tank Area (NPL site), Pit Q-51 (NPL site), abandoned pits at the IWTP, Fire Training Area 2, and Building 3001. Field investigations have been completed at Landfills 1-4, Landfill 6, Fire Training Area 1, Supernatant Pond, and Industrial Waste Pit 2, Building 3001, and two radioactive waste dump sites. Investigations are underway at the IWTP, Industrial Waste Pit 1, Southwest Tank Area, Area A Refueling Station, 3700 Fuel Yard, Four Fuel Sites, 3 radioactive waste dump sites, Crutcho Creek, Kuhlman Creek, and the Soldier Creek NPL site.

No off-base contaminant migration has been confirmed to date. An IAG covering the NPL site was signed December 1988.

Remedial Design/ Remedial Action (RD/RA)

The ROD for Building 3001, North Tank Area operable unit, and Pit Q-51 operable unit was signed in 1990. Pit Q-51 was cleaned and plugged in September 1990. The design efforts for the recommended B3001 ground water recovery and treatment system was completed in August 1991.

Landfills 1 and 5 have been capped and the Landfill 6 cap was repaired. Landfill 3 is presently near completion on the capping action.

Documentation recommending no further action has been completed for three wells, Pit Q-51, Fire Training Areas 2 and 4, Facility 1123, three of the five radioactive waste disposal sites, and the industrial waste pits.

Future RA work will include the removal of radioactive waste and the use of innovative solidification/ stabilization techniques at the supernatant pond.

Tobyhanna Army Depot (79)
Tobyhanna, Pennsylvania

Service: Army

Size: 1,293 Acres

HRS Score: 37.93

Base Mission: Logistics for communications/electronics equipment; Largest communications/electronics overhaul facility in Army

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: VOCs, heavy metals

Funding to Date: $4.99 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI was completed in 1980 and updated in 1988. These initial studies confirmed that there was VOC contamination of both on-post and off-post wells. As a result of the IAG, additional sites require SI work. The SI is currently underway at these sites.

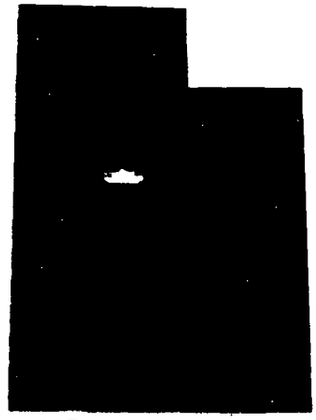
Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS, initiated in July 1987, addressed VOC contamination in the southeast corner of the depot. Two source areas have been confirmed with one only a few hundred feet from affected off-post wells. The preferred response measures under the FS are passive volatilization for contaminated soils (tilling soils within a specially constructed building); pumping and treating ground water; and providing an alternate water source to affected residents.

Remedial Design/ Remedial Action (RD/RA)

A treatability study is being conducted for the passive soil volatilization technology. The Army has been providing bottled water for 26 residences and one business since March 1987. A waterline extension from the depot to the affected residents was completed June 1991.

Tooele Army Depot (North Area) (80)
Tooele County, Utah



Service: Army

Size: 44,087 Acres

HRS Score: 53.95

Base Mission: Store and supply equipment; Build and repair locomotives, wheeled vehicles, and transport cars

IAG Status: Pre-ROD IAG signed September 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS initiated 1987

Contaminants: Heavy metals, petroleum/oil/lubricants, PCBs, paint primers, cleaning, plating and explosive wastes

Funding to Date: $24.26 million

Preliminary Assessment/ Site Inspection (PA/SI)

Historic disposal practices consisted of discharging wastes to evaporation or percolation ponds, detonation and burning, and burial at the demilitarization range. Consequently, ground water was threatened by contaminant migration from the waste sites; plant and animal life in the area also could be affected.

The December 1988 PA/SI identified potential ground water contaminant migration. Five sites presented a significant threat to public health and the environment, including explosives found in the ground water beneath the TNT washout pond. Ground water is contaminated with volatiles at the Industrial Waste Lagoon (IWL).

Remedial Investigation/ Feasibility Study (RI/FS)

An environmental survey in 1982 indicated that TCE from the IWL was migrating to the northern boundary on-post. An RI addendum report in 1989 concluded that a plume of ground water contamination containing TCE from the IWL extends off-post approximately 2,500 feet. A site-wide RI/FS was initiated in September 1987. Additional ground water contamination was detected at the Sanitary Landfill and the TNT washout pond. These results were published in December 1990. A follow-on RI was initiated and workplans were submitted to the regulators in October 1991. RFI and RI work initiated in 1990 in the North and South areas and continued during 1991.

Remedial Design/ Remedial Action (RD/RA)

The IWL was granted interim status under RCRA in 1985. This required installation of monitoring wells, but the previously documented evidence of ground water contamination caused TEAD to enter into a Consent Decree with the State of Utah. As a result, a ground water quality assessment was conducted. The Consent Decree also required TEAD to cease discharging wastewater into the IWL and to close the lagoon. Closure of the lagoon was completed in 1989 and construction of a ground water pump and treat system was initiated in 1991.

Tracy Site, Defense Distribution Region West (formerly Tracy Defense Depot) (81)
Tracy, California

Service: Defense Logistics Agency

Size: 448 Acres

HRS Score: 37.16

Base Mission: Store and distribute food, medical, electronic, and industrial/construction equipment; and textiles for Armed Forces in the western U.S. and Pacific

IAG Status: Signed 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Heavy metals, petroleum/oil/lubricants, VOCs, TCE, PCE

Funding to Date: $9.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 32 sites of contamination on-depot with strong contamination migration potential. All 32 sites will be included in the RI/FS investigations. The upper ground water aquifer, both on- and off-depot, is contaminated with both TCE and PCE beyond federal safety standard limits.

Remedial Investigation/ Feasibility Study (RI/FS)

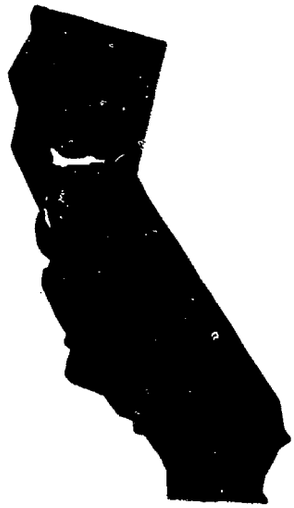
An RI/FS began in September 1986 on 32 sites. In addition to the contaminated upper aquifer, the soil on-depot is likewise contaminated. Ninety monitoring wells have been installed, and 61 soil borings and 180 soil vapor tests have been conducted. This RI/FS addresses ground water only and is referred to as Operable Unit (OU) One. An installation-wide RI/FS for soil contamination will be awarded during FY 1992.

Remedial Design/ Remedial Action (RD/RA)

An IRA contract awarded in September 1989 led to the construction of an air stripper to remove contaminants from the ground water. The stripper was installed during the third quarter of FY 1991. Five extraction wells, three injection wells and 10 additional monitoring wells were installed as part of this project.

Travis Air Force Base
Solano County, California

(82)



Service: Air Force

Size: 5,025 Acres

HRS Score: 29.49

Base Mission: Gateway to the Pacific, providing strategic airlift services for troops, cargo, and equipment; west coast terminals for aeromedical evacuation

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: VOCs, heavy metals, polynuclear aromatic hydrocarbons

Funding to Date: $10.19 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Travis AFB is primarily agricultural. Industrial operations on base include aircraft and automotive servicing, above and below ground fuel storage and distribution, and facility maintenance and repair.

A PA/SI identified several sites potentially contributing to contamination due to past operations and disposal practices. These sites include old landfills, a closed sewage treatment plant, fire fighting training areas, disposal pits, spill areas, and the storm drainage system. Volatiles present in the storm sewer system, particularly TCE, could possibly reach Union Creek. Point Arena AFS, an auxiliary installation occupying 81 acres on a mountain top in Mendocino County, contains both mercury and possibly VOC contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS is underway to determine the type and extent of contamination and to identify alternatives for remedial action. Two additional sites have been added to the investigation: the Cyanide Disposal Pit (CDP), where approximately 250 pounds of cyanide were buried, probably in 1967; and the Grazing Management Units, where a swelling affliction has been observed in horses. Preliminary analysis indicates that fine-grained alluvial sediments of very low permeability exist beneath the base. Localized buried sand and gravel channels represent likely pathways for contaminant migration. The ground water at Travis AFB contains naturally elevated concentrations of several metals and common anions. The contaminants detected in the ground water include volatile organics and metals. Metals and polynuclear aromatic hydrocarbons (PAHs) were detected in the surface water, sediments of the storm sewers, and Union Creek. Completion of the RI/FS is expected in 1993.

Remedial Design/ Remedial Action (RD/RA)

Twenty-seven USTs were removed from various IRP sites at Travis AFB in 1986. In 1990, an IRA was initiated to investigate, intercept and cleanup floating fuel products in the ground water table. Additional RD/RA activities will be determined by a ROD anticipated for early 1994.

Treasure Island Naval Station—Hunters Point Annex (83)

San Francisco, California

Service:	Navy
Size:	936 Acres
HRS Score:	48.77
Base Mission:	Support Pacific Fleet
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	RI/FS initiated 1987; Placed on NPL 1989
Contaminants:	Paints, solvents, fuels, acids, bases, heavy metals, PCBs, asbestos, phenols, polyaromatic hydrocarbons, VOCs
Funding to Date:	$31.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Formerly the Hunters Point Naval Shipyard, Hunters Point Annex was established in 1869 as the first dry dock on the Pacific Coast. The Navy purchased the installation in 1939 and leased it to Bethlehem Steel Company. The Navy operated Hunters Point Annex as a shipbuilding and repair facility from 1941 until 1976. Triple A Machine Shop then leased the facility from 1976 to 1986 and subleased numerous buildings to private tenants. Testing in 1987 detected benzene, PCBs, toluene, and phenols in onsite ground water. A bottling company draws ground water from a spring approximately one mile from Hunters Point Annex. Offshore sediments contain elevated levels of heavy metals and PAHs. Area surface waters are used for recreational activities, commercial navigation, and fishing.

Remedial Investigation/ Feasibility Study (RI/FS)

To date, the RI/FS has included 23 sites. Four removal actions are planned for 1992, including site treatment, decontamination, and waste removal.

A TRC was formed in 1988 and members include representatives from COMNAVBASE San Francisco; Treasure Island Naval Station; Western Division, Naval Facilities Engineering Command; California Department of Toxic Substances Control, California Regional Water Quality Control Board; Bay Area Air Quality Management District; EPA Region IX; the City and County of San Francisco; NOAA; Department of Interior, and a public representative appointed by the Mayor of San Francisco.

The last phase of field work for one Operable Unit began in 1991. The draft RI report is scheduled for completion in June 1992. In addition, development of RI work plans for four sites began in 1991. Completion of RI/FS work for all sites is expected in 1994.

Remedial Design/ Remedial Action (RD/RA)

A removal action was implemented in 1986 to clean up PCBs. Removal of asbestos was undertaken and completed in 1990. RD/RA work will begin after completion of RI/FS activities.

Twin Cities Air Force Reserve Base (84)
(Small Arms Range Landfill)
Minneapolis, Minnesota

Service: Air Force

Size: 280 Acres

HRS Score: 33.70 (One site only, Small Arms Range Landfill)

Base Mission: Tactical Airlift

IAG Status: Pre-ROD IAG signed by the Air Force and USEPA Region V November 1989; Public comment period completed January 1990

Action Dates: SI completed 1986 RI completed in 1990; FS completed 1991; Placed on NPL 1987

Contaminants: Oil/petroleum/lubricants, spent solvents and cleaners, battery acid, strippers, painting wastes (containing metals such as chromium), PCB-contaminated oils, chlorinated hydrocarbons

Funding to Date: $2.94 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Air Force Reserve completed a PA in March 1983 and an SI in April 1986. The Small Arms Range Landfill is located on non-contiguous property two miles from the main base property, and was the primary solid waste disposal site for the base from 1963 to 1972. The landfill primarily contains general refuse, but industrial waste products may have been buried or burned in this landfill. These products include paint thinners and removers, paint, primers, lacquers, paint filters containing chromium in the paint, and 100 to 200 gallons of leaded fuel sludge. This landfill is almost three acres, and is located adjacent to the Minnesota River within the 100-year flood plain. The northern boundary of the Minnesota Valley National Wildlife Refuge lies 500 feet from the landfill. It flooded once in 1965. The EPA HRS staff estimated 64,700 people living in the Minneapolis-St. Paul metropolitan area depend on public and private wells for drinking water within a 3-mile area of the landfill.

The other sites include a landfill, fuel spills, sludge burial pits, hazardous waste drum storage area, battery shop leaching pit, and UST. The PA/SI identified a possible plume of AVGAS on the ground water table at the Past Fuel Site, and also identified additional potential for contamination problems.

An SI is underway for two sites, Temporary Landfill and Hangar P-1 Area. Field work for this project was completed in December 1991.

Remedial Investigation/ Feasibility Study (RI/FS)

For the NPL site, Small Arms Range Landfill, initial investigation studies were completed in 1986. The RI was completed in July 1990, the FS was completed in June 1991, and the Proposed Plan in August 1991. The public meeting was held on 5 September 1991. Ground water investigation results indicate very low concentrations of only a few compounds were detected. The first round of ground water sampling showed traces of some volatile aromatic compounds; methylene chloride, 1,2-DCE, acetone, 2-butane, chloroform, TCE, benzene, and toluene. Only TCE was detected above federal MCLs in the upgradient well, which suggests an off-base source. Also detected was the organic compound bis (2-ethylhexyl) phthalate, which was slightly above the Minnesota Recommended Allowable Limit

Twin Cities Air Force Reserve Base
(Small Arms Range Landfill) Minneapolis, Minnesota

(Continued)

(RAL) in one sample. Some metals were detected, but the levels were very low, (below SDWA MCLs,) and are attributed to background and not the landfill. The second round of sampling detected 1,2-DCE significantly below federal MCLs, bis(2-ethyl-hexyl) phthalate below state RALs, di-n-butylphthalate, and caprolaccam in low concentrations. Metals were detected in the second round of sampling, but again in low concentrations below the SDWA MCLs. The 12 monitoring wells around the site screen the ground water from 5 to 60 feet below level surface.

The chosen remedial alternative is natural attenuation with ground water and surface-water monitoring, maintenance of the landfill cover, and site access restrictions. This alternative was chosen in coordination with the USEPA and MPCA and is acceptable by both agencies.

Negotiations for an FFA between the Air Force, EPA, and the State of Minnesota concluded on August 15, 1989. Due to differences between the DoD and State of Minnesota on the issue of reimbursement, the FFA has only been signed by the Air Force and EPA.

The RI/FS for one site, Past Fuel Spill, was completed in March 1989. A plume of AVGAS has been discovered floating on the ground water table and migrating to the southwest. A variation of the pump and treat method has been chosen as the remediation alternative. This will involve pumping the contaminated water to the surface, separating out the liquid AVGAS, discharging the treated water to the sanitary or storm sewer, and disposing of the AVGAS at an appropriate facility.

An RI/FS is currently underway for five other sites: MOGAS Spill, Suspected Oil Spill Area, former Hazardous Waste Drum Storage Area, Underground Tank Leak, and Battery Acid Leaching Pit. Field work for these sites was completed in July 1990 and the RI report should be completed in November 1991.

Remedial Design/ Remedial Action (RD/RA)

The chosen remedial alternative for the NPL site described previously requires no design actions and remedial action will begin immediately following the completion of the Record of Decision.

The remedial design for the pump and treat system at the Past Fuel Spill Site was completed in August 1990. Construction of the system was completed and became operational in May 1991.

Remedial action was accomplished at one site, JP-4 Spill Site, between 1984 and 1985. A state-approved venting system was installed, and effluent contaminant levels decreased until they were no longer detectable in laboratory analysis. The system was removed upon state concurrence that the site does not pose a threat to human health or the environment.

Furthermore, approximately 1,400 cubic yards of PCB-contaminated soil have been incinerated. The in-situ volatilization units installed at Site D and Site G have recovered approximately 222,678 pounds of volatile organic compounds (VOCs).

Twin Cities Army Ammunition Plant (85)
New Brighton, Minnesota

Service:	Army
Size:	2,560 Acres
HRS Score:	59.16
Base Mission:	Small arms and projectile casing manufacture
IAG Status:	Pre-ROD IAG signed 1987 with EPA and State of Minnesota
Action Dates:	PA/SI completed 1988; RI completed 1991; FS initiated 1991; Placed on NPL 1982
Contaminants:	VOCs, heavy metals, solvents, acids and caustics, fuels, cleaners, paints, explosives
Funding to Date:	$33.27 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sources located on the Twin Cities Army Ammunition Plant (TCAAP) have contaminated ground water primarily with VOCs. The contamination affects water supplies for the cities of New Brighton and St. Anthony, located 2.5 and 4.5 miles downgradient, respectively. The PA/SI verified the presence of 14 potentially contaminated sites. Concurrent field investigations conducted since 1981 verified three major sources of regional ground water contamination. Site D is a former series of earthen impoundments used for industrial waste disposal. Site G is a former landfill used for building and industrial waste disposal. Site I (Building 502) is the area where industrial operations introduced VOCs to the ground water system. Two other sites have contributed to perched ground water contamination. These sites consist of Site A, a former disposal area for industrial waste, and Site K (Building 103), where industrial operations introduced VOCs to the ground water system. The remaining 14 sites have not contributed significantly to ground water contamination at TCAAP.

Remedial Investigation/ Feasibility Study (RI/FS)

Alliant Tech Systems, Inc., formerly Honeywell, Inc., an industrial tenant of TCAAP, and the Department of the Army have installed approximately 300 monitoring wells both on and off the plant to define the magnitude and extent of ground water contamination. The FFA requires the DA to complete an RI on TCAAP and requires EPA to conduct an investigation of off-plant areas. These efforts were completed in 1991. The FS was initiated by the Army in August 1991.

Remedial Design/ Remedial Action (RD/RA)

A regional ground water treatment system has been installed to extract and treat ground water, prevent contaminant migration beyond plant boundaries, and contain highly contaminated ground water within the plant interior.

Additional efforts to preclude ground water contamination include installation of two ISV systems at Sites D and G, ground water treatment at Site I, incineration of contaminated soils, and provision of contaminated soil storage facilities. Efforts also are being conducted at Sites A and K to prevent contamination from migrating within the perched ground water system.

Approximately 3.7 billion gallons of contaminated ground water have been treated and 144 tons of contaminants have been removed.

Umatilla Army Depot
Hermiston, Oregon

(86)

Service: Army

Size: 19,729 Acres

HRS Score: 31.31

Base Mission: Ammunition storage

IAG Status: Pre-ROD IAG signed October 1989

Action Dates: PA/SI completed 1980; Placed on NPL 1987; RI/FS initiated 1989

Contaminants: Metals, red fuming nitric acid, pesticides, RDX, nitrates, TNT, TNB, HMX, DNT isomers

Funding to Date: $14.05 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI identified and targeted several major contaminant sources for RI/FS work. These areas contained explosive wastes and UXO. Ground water under the washout lagoons was contaminated with cyclonite (RDX), nitrates, TNT, TNB, HMX, and DNT. An enhanced PA in support of base closure activities was prepared concurrently with the RI/FS work plan under the IAG. The enhanced PA was submitted in April 1990.

Remedial Investigation/ Feasibility Study (RI/FS)

A Phase I RI determined the washout lagoons had contaminated the alluvial aquifer with TNT, RDX, HMX, TNB, DNT, and nitrates. In addition, the shallow basalt aquifer contained very trace quantities (approximately 1 ppb) of explosives. Several SWMUs, including the deactivation furnace, active and inactive landfills, the ammunition demolition area, and several septic tanks, showed various industrial and explosive contaminants. A Phase II RI was initiated in August 1989. Work conducted under the IAG will cover 55 sites, 22 in the ammunition demolition area. RI field work was initiated in May 1990. Field work for asbestos and radon assessments in support of the base closure mission was initiated in FY 1990.

A supplemental RI/FS addressing remaining sites was initiated in September 1991.

Remedial Design/ Remedial Action (RD/RA)

RI/FS documents are being prepared for an operable unit remedial action of the washout lagoons. The composting technology demonstrated in a recent pilot study at Umatilla is being considered for the remedial action.

Weldon Spring
(Chemical Plant and Training Area)
St. Charles County, Missouri

(87)

Service:	Army
Size:	Chemical Plant: 230 acres; Training Area: 1,655 acres
HRS Score:	58.60
Base Mission:	Formerly used in support of the Ordnance Works Production Area, then transferred to AEC for processing uranium and thorium
IAG Status:	Signed June 1990
Action Dates:	PA/SI completed 1977; Listed on NPL 1990; RI/FS began 1990
Contaminants:	TNT, DNT, lead, thorium, uranium, PCB, asbestos
Funding to Date:	$26.19 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Weldon Spring Ordnance Works is composed of two major components: the active portion is a 1,655-acre area where TNT and DNT were produced during World War II; the inactive portion is a 15,577-acre area that provided support facilities, such as water treatment, storage magazines, power plants, heat plants, classrooms, and housing, to the production area. Adjacent to the active site is the 230-acre former Atomic Energy Commission (AEC) facility, which processed uranium from 1957 to 1966 and is listed separately on the NPL with DOE and the Army as the PRPs. The AEC facility is located on an area that was originally part of several TNT production lines. As a result of an OMB decision and an MOU between the Army and DOE, the Army is funding DOE for part of the Chemical Plant remedial work.

Remedial Investigation/ Feasibility Study (RI/FS)

During the RI on the active portion of the site, 8,000 surface soil samples were taken; subsurface soil samples were taken at 41 locations; 34 monitoring wells were installed onsite; 14 monitoring wells were installed offsite; water was sampled at 10 springs and eight lakes; sediment was sampled at eight lakes; and soil vapor testing was conducted in four areas. A wooden pipeline was mapped using ground penetrating radar at 270 locations and sampled at 24 locations. Nitroaromatics and VOCs were detected in the ground water, nitroaromatics and lead were detected in the surface soil, and nitroaromatics were detected in the wooden pipeline. A draft FS was submitted in July 1990. A draft Risk Assessment was submitted October 1990.

The Chemical Plant area at Weldon Spring has been broken into four OUs: Chemical Plant/ Raffinate Pits, Quarry Bulk Waste, Quarry Follow-on (residuals), and Site Ground Water. The FS for the Chemical Plant/Raffinate Pits is underway with the ROD scheduled for May 1993. RI/FS scoping has begun for the Quarry Follow-on OU with the RI/FS scheduled to begin in FY 1992. RI/FS scoping is planned for the Site Ground Water OU.

Remedial Design/ Remedial Action (RD/RA)

Various IRAs have been initiated or completed for the Chemical Plant area to mitigate actual or potential releases of radioactive or chemical contaminants to the environment. RODs for the Quarry Bulk Waste Removal effort were signed in September 1990 and March 1991. Supporting activities are underway with the final action expected to begin in May 1992. For the remaining OUs RD/RA work will begin after completion of the RI/FS.

West Virginia Ordnance Works (88)
Point Pleasant, West Virginia

Service: Army

Size: 8,323 Acres

HRS Score: 35.72

Base Mission: Established in 1942 and produced TNT from toluene for the World War II war effort; Deactivated in 1946

IAG Status: First OU IAG signed 1987; Second OU IAG signed 1989

Action Dates: PA/SI completed 1982; Placed on NPL 1984; RI/FS initiated 1984. ROD for OU #1 signed 1987; ROD for OU #2 signed 1988; Omaha District assigned RD for Second OU cleanup in November 1989; Transition to FUDS Program October 1991

Contaminants: Nitroaromatic residues

Funding to Date: $17.62 million

Preliminary Assessment/ Site Inspection (PA/SI)

In May 1981, red water seepage was observed adjacent to Pond 13 in McClintic State Wildlife Station (MSWS). The pond was located near the former TNT wastewater trunk sewerlines and pumping station. Studies by the West Virginia Department of Natural Resources and EPA contractors in 1981 and 1982 showed 2,4-TNT, 2,6-TNT, 2,4,6-TNT, and phenol present in the ground water. A 1984 archives search of the West Virginia Ordnance Works (WVOW) concluded that, based upon contaminant sources and the hydrogeologic setting of WVOW, the potential existed for contamination migration through surface and ground water pathways.

Remedial Investigation/ Feasibility Study (RI/FS)

In 1984, the Army contracted for an RI to determine the extent of contamination, a human health and environmental endangerment assessment (EA), and an FS to identify and assess remedial action alternatives. The RI, completed in 1985, determined that major contaminant source areas were soils in the TNT manufacturing area, underground process lines, and soils in a burning grounds area. The deep aquifer under the manufacturing area and the ground water in the burning grounds area were not contaminated. To expedite cleanup, activities were divided into two operable units (OUs); the manufacturing area, burning grounds area, and industrial sewer lines; and the acids area/yellow water reservoir, red water reservoirs, and Pond 13/Wet Well site. An FS for the first OU was completed in 1986 and for the second OU in 1988. The ROD for the second unit called for capping two red water ponds, and building two ponds on the MSWS, capping Pond 13, capping the yellow water reservoir, pumping and treating related ground water, and purchasing an industrial park at the acids area/yellow water reservoir for incorporation into MSWS.

Remedial Design/ Remedial Action (RD/RA)

A contract was awarded in 1987 by the Army to perform remedial actions on the first OU. Field work was conducted in 1988 and consisted of excavation and flaming of industrial sewerlines and flaming the surface of the burning ground. A soil cap was then placed over contaminated soils at the TNT manufacturing and burning grounds area. A $4.6 million contract for capping the two red water ponds was awarded on August 31, 1990. Construction began in the summer of 1991. Capping material was removed from a clean borrow on site; the borrow area subsequently will be converted to an 11.5-acre wetlands. A contract for capping the yellow water reservoir was awarded in September 1991. A ground water study is in the planning phase. The project will be funded through the FUDS program beginning in FY 1992.

Williams Air Force Base (89)
Chandler, Arizona

Service: Air Force

Size: 4,127 Acres

HRS Score: 37.93

Base Mission: Pilot training; Aircraft and ground equipment maintenance

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Waste solvents, fuels and lubricants, heavy metals

Funding to Date: $11.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Irrigated farmland and desert surround Williams AFB. Past disposal practices have contaminated soils with heavy metals and ground water with petroleum products. The Air Force has completed an initial assessment and the potentially contaminated areas include a past fire protection training area, drainage systems, and landfill and spill areas.

Remedial Investigation/ Feasibility Study (RI/FS)

A work plan has been developed for an RI/FS to determine the type and extent of contamination and to identify alternatives for remedial action. Field investigations are underway.

Remedial Design/ Remedial Action (RD/RA)

The Southwest Draining System was remediated in 1988 by installing a soil cement and concrete cap on the upper 350 feet of the ditch. This action was agreed to by State of Arizona regulatory officials.

Monitoring wells approximately 350 feet deep have been installed at the liquid fuels storage area to determine the extent of vertical migration of leaked fuel. Shallow wells approximately 250 feet deep have been installed to plot the extent of this plume. Pump tests have been conducted to gather data needed for remedial design of a proposed pump and treat facility. Continuous fuel recovery has been started.

A storage tank was removed during 1991 from the electroplating shop. Removal of drums was also completed during that year at the pesticide burial area.

Two operable units (OU) have been established. OU2 is the former liquid fuel storage area and is the first to be considered. OU1 is the final remedy for the remediation of all sites. Two Proposed Plans and two RODs will be prepared.

A draft of the ROD for OU2 is expected by July 1992 and for OU1 by September 1993. The RD for OU2 is expected April of 1994 and RA April 1995. RD for OU1 expected November 1994 and RA November 1995.

The Draft Remedial Investigation Report for OU2 was published in 1991. The Draft Feasibility Study and the Draft Proposed Plan have been submitted for regulatory review. A pilot study/demonstration project is underway at OU2. Two horizontal wells and a large diameter well will be compared to determine the efficiency of jet fuel removal from the shallow water table.

Wright-Patterson Air Force Base (90)
Dayton, Ohio

Service:	Air Force
Size:	8,511 Acres
HRS Score:	57.85
Base Mission:	Headquarters to Air Force Logistics Command, Aeronautical Systems Division and Air Force Institute of Technology; Medical Center
IAG Status:	Pre-ROD IAG signed March 1991
Action Dates:	RI/FS initiated 1986; Placed on NPL 1989
Contaminants:	Waste oil and fuels, acids, plating wastes, solvents, pesticides, batteries, radioactive wastes
Funding to Date:	$69 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past Air Force activities in support of operational missions have created 62 unlined waste disposal areas throughout the base, including landfills, spill sites, fire training areas, and coal storage piles. As a result, contamination of the aquifer used by the city of Dayton and the base for drinking water has occurred.

Known sites were rated in 1982 during the first phase of the IRP. Twenty-four sites located on the base contained hazardous material.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS contract was awarded in November 1989. The RI/FS for all sites is currently scheduled to be completed in 1998. Landfills 8 and 10 have been the highest concern due to their proximity to the Woodland Hills residential area. Both landfills were a trench and cover operation for disposal of general refuse and chemical waste. Ground water in the vicinity of Landfill 8 is contaminated with benzene and TCE. Landfill 10 is contaminated with VOCs. However, complications have arisen with landfill subsidence, gas generation and venting, and seepage of leachate. The RI/FS for these sites is scheduled for completion by April 1993. A focused RI/FS for Source Control is scheduled for initiation in 1992. The base will begin four additional RI/FS projects at the next highest priority operable units in 1992. Also in 1992 a Basewide Monitoring Program will be initiated. In June 1987, the USGS initiated a hydrogeological assessment of the strata underlying the base to understand ground water movement and the direction of contaminant migration. The complete USGS study will provide a technical foundation for future base-wide IRP activities and is scheduled for completion in 1992. Regional ground water flows in a southwesterly direction toward the City of Dayton's drinking water well fields. The existence of permeable soils in the area exacerbates this concern. The IAG with the USEPA Region V was signed on March 21, 1991. The base is under an Administrative Order of Consent (February 1988) which specifies site RI and cleanup processes.

Remedial Design/ Remedial Action (RD/RA)

Drinking water from base wells is being treated for VOC contamination. In 1991 the base initiated a Removal Action along the base boundary to intercept and treat ground water found to be contaminated with TCE flowing in the direction of the City of Dayton's well fields. The permanent system will be fully operational in 1992. Another Removal Action was initiated in 1991 at Spill Sites 2 and 3 to delineate the extent of a free product plume (JP4) and to implement a free product recovery and ground water treatment system.

Yuma Marine Corps Air Station (91)
Yuma, Arizona

Service: Navy

Size: 3,000 Acres

HRS Score: 32.24

Base Mission: Tactical aircrew combat training

IAG Status: Initiated and expected to be signed 1992

Action Dates: PA completed 1985; SI completed December 1990; RI/FS initiated 1990; Placed on NPL 1990

Contaminants: VOCs, waste fuels, oils, degreasers, solvents, paints, PCBs, pesticides, herbicides, photographic chemicals

Funding to Date: $1.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Ground water is a potable water source for Yuma Marine Corps Air Station (MCAS), the City of Yuma, and for industrial and agricultural purposes. Past disposal practices contaminated soils and ground water. A PA/SI identified 12 potentially contaminated sites, and recommended that two sites be studied further to confirm contamination.

The confirmation study for these two sites was completed in early 1988. In response to a State of Arizona request made in July 1988, 11 of the original 12 IAS sites and two additional sites were investigated further as a part of an SI completed in December 1990. To date, 18 sites have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed and the first meeting was held in April 1990. Members include representatives from the City of Yuma; the Arizona Department of Environmental Quality; EPA Region IX; Yuma MCAS; Southwest Division, Naval Facilities Engineering Command; and the public. Development of the RI/FS work plan began in November 1990.

Yuma MCAS was listed on the NPL in February 1990. Subsequently, EPA assigned a separate remedial project manager for the base. FFA negotiations with EPA and the State of Arizona were initiated and completed in 1990. Final signature is expected in 1992.

Remedial Design/ Remedial Action (RD/RA)

Although no RD/RA activities are currently planned in 1992, removal actions will be considered if an imminent threat is identified during the RI/FS.

Appendix C
Status of IRP Installations

This Appendix to the Annual Report includes three tables that summarize the status of activities at all DoD installations included in the IRP by the end of FY 1991.

Table C-1 summarizes IRP site status by state, DoD component (Army, Navy, Air Force, and Defense Logistics Agency), and installation. Table C-2 provides a status summary by DoD component.

The status abbreviations used in this Appendix are as follows:

C	–	Number of sites for which a particular study or action has been completed
U	–	Number of sites with a particular study or action underway
F	–	Number of sites scheduled to have a study or action performed in the future
CO	–	Number of closed-out sites where no further action is required.

Installation status is designated as follows:

Italicized	–	The installation is listed on the NPL
●	–	The installation has a signed IAG
♦	–	The installation is proposed for listing on the NPL.

Table C-1

Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
ALABAMA																				
ARMY																				
AFRC Birmingham	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Cullman	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Gadsden	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Alabama AAP	37	37	0	0	0	35	0	2	1	29	5	0	0	12	4	0	12	2	2	
Anniston Army Depot	45	45	0	0	0	45	0	0	0	0	45	0	0	3	2	37	3	2	36	
Coosa River Storage Annex (Anniston)	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Fort McClellan	60	60	0	0	43	0	17	0	0	0	0	0	0	0	0	0	0	0	0	
Fort Rucker	106	106	0	0	0	105	0	0	62	0	43	62	0	0	0	105	0	0	105	
Phosphate Dev Works	31	31	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	
Redstone Arsenal	71	71	0	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Abbeville	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Anniston	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Beltline	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Birmingham 01	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Birmingham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Cropwell (ASF 155)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dothan	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Elba	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Enterprise	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Foley	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Rucker (ASF 157)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Rucker (ECS 143)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Gadsden	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Holt	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
ALABAMA (Continued)																				
ARMY (Continued)																				
USARC Huntsville (Patton Rd)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Jasper	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lincoln (Talladega)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Marion, AL	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Mobile (Wright)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Montgomery (Moniac)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Montgomery (Screws)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Opelika	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC OPP	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sheffield	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Troy	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tuscaloosa	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tuskegee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC York, AL	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	**502**	**502**	**0**	**0**	**192**	**255**	**17**	**5**	**63**	**30**	**93**	**62**	**0**	**15**	**7**	**142**	**15**	**4**	**144**	
AIR FORCE																				
Abston AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	
Birmingham Municipal Airport	16	16	0	0	0	16	0	0	6	7	4	0	0	1	4	0	0	1	3	
Dannelly Field ANG	5	5	0	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	
Gunter AFB	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	
Hall AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	
Maxwell AFB	22	22	0	0	0	22	0	0	0	21	1	0	0	7	10	0	5	12	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALABAMA (Continued)																			
AIR FORCE (Continued)																			
Montgomery AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	59	44	15	0	0	44	15	0	6	28	8	0	0	8	14	0	5	13	4
ALABAMA TOTALS	561	546	15	0	192	299	32	5	69	58	101	62	0	23	21	142	30	17	148
ALASKA																			
ARMY																			
Fort Greely	21	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Richardson	39	39	0	0	0	39	0	0	0	0	39	0	0	0	0	2	0	0	2
Fort Wainwright	50	50	0	0	1	8	13	28	0	3	2	5	0	3	1	3	2	8	1
Gerstle River Test Site	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	115	115	0	0	1	73	13	28	0	3	41	5	0	3	1	4	2	8	3
DEPARTMENT OF NAVY																			
FLTSUPPCEN (DET 1 Anchorage	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
NAS Adak	95	95	0	0	0	66	25	4	2	0	30	25	0	0	0	76	1	2	74
NAVARCLAB Barrow	13	13	0	0	0	13	0	0	5	0	0	0	0	0	0	8	0	1	8
NOSC Special Areas Alaska	8	0	8	0	0	0	8	0	0	0	0	7	0	0	0	4	0	0	7
DEPARTMENT OF NAVY TOTALS	117	108	9	0	0	79	33	4	30	0	35	32	0	0	0	88	1	4	89
AIR FORCE																			
Alaskan Defense	49	48	0	0	1	49	0	0	11	49	0	0	33	0	0	0	0	0	0
Anvil Mountain	1	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
Bear Creek RRS	9	9	0	0	0	9	0	0	0	0	3	0	0	0	0	0	0	0	0
Bethel RRS	10	10	0	0	0	10	0	0	0	1	8	0	0	1	0	0	1	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALASKA (Continued)																			
AIR FORCE (Continued)																			
Big Mountain RRS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
Campion AFS	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	8	0	0	8
Canyon Creek	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Cape Lisburne AFS	6	6	0	0	0	6	0	0	6	0	6	0	0	0	0	6	0	0	6
Cape Newenham AFS	6	6	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
Cape Romanzof AFS	12	12	0	0	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0
Chena River	1	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
Clear AFB	15	15	0	0	0	15	0	0	3	15	0	0	10	5	5	0	5	5	0
Cold Bay AFS	4	4	0	0	0	4	0	0	1	4	0	0	0	0	4	0	0	4	0
Duncan Canal RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Eielson AFB	72	65	7	0	0	65	7	0	0	27	12	0	0	10	34	0	2	42	0
Elmendorf AFB	58	52	6	0	0	52	6	0	1	21	33	0	0	0	58	0	2	2	0
Fire Island	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Fort Yukon AFS	5	5	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	5
Galena Airport	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	10	0	0	10
Gold King Creek Radio Relay Site	2	2	0	0	0	2	0	0	0	1	1	0	0	0	1	0	0	1	0
Granite Mountain RRS	2	2	0	0	0	2	0	0	0	2	0	0	0	0	2	0	0	2	0
Indian Mountain Research Site	20	20	0	0	0	20	0	0	0	0	20	0	0	0	0	20	0	0	20
Kalakaket Creek RRS	2	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0
King Salmon AFS	19	19	0	0	0	19	0	0	0	1	0	0	0	1	0	0	1	0	0
Kotzebue	7	7	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0
Kulis ANG Base	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Murphy Dome AFS	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	8	0	0	8
Naknek Recreation Camps	3	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	3	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALASKA (Continued)																			
AIR FORCE (Continued)																			
Nikolski Radio Relay Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nome Tank Farm	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
North River Radio Relay Site	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Ocean Cape Radio Relay Site	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Pillar Mountain RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
Port Heiden Radio Relay Site	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Shemya AFB	34	34	0	0	0	34	0	0	0	11	0	0	0	7	0	0	7	0	0
Smugglers Cove Radio Relay	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Soldotna RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Sparrevohn AFS	9	9	0	0	0	9	0	0	0	1	0	0	0	1	0	0	1	0	0
Tatalina AFS	13	13	0	0	0	13	0	0	11	0	13	0	0	0	0	13	0	0	13
Tin City AFS	10	10	0	0	0	10	0	0	5	1	0	0	0	1	0	0	1	0	0
Unalakaleet RRS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	411	396	15	0	1	394	17	0	44	164	133	2	43	29	110	73	23	63	73
DEFENSE LOGISTICS AGENCY																			
DFSP Anchorage	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DFSP Fairbanks	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DFSP Whittier	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	5	5	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	5
ALASKA TOTALS	648	624	24	0	2	551	63	32	74	167	217	39	43	32	111	170	26	75	170

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
ARIZONA																				
ARMY																				
Fort Huachuca	62	62	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0	
Navajo Army Depot	47	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	1	0	
NG Buckeye	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Florence	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Papago Park Military Reservation	1	1	0	0	0	1	0	0	0		0	0	0	0	1	0	0	1	0	
USARC Douglas	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Phoenix	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Phoenix 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tucson	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yuma Proving Ground	43	43	0	0	0	43	0	0	0	0	0	1	0	0	0	0	0	0	1	
ARMY TOTALS	174	174	0	0	19	154	0	0	0	1	0	1	0	0	1	0	0	2	1	
DEPARTMENT OF NAVY																				
MCAS Yuma	18	18	0	0	0	18	0	0	1	0	17	0	0	0	0	17	0	0	17	
NOSC Sentinel	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	19	19	0	0	0	18	0	1	1	0	17	0	0	0	0	17	0	0	17	
AIR FORCE																				
AFP No. 44, Tucson	13	13	0	0	0	13	0	0	0	12	1	0	0	0	0	0	0	0	0	
AJO AFS	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	
Alcoa AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
Davis Monthan AFB	52	52	0	0	1	51	0	0	22	5	6	0	0	4	1	0	3	1	0	
Luke AFB	31	31	0	0	7	31	0	0	6	8	0	0	0	1	1	0	0	1	1	
Phoenix/Humboldt	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sky Harbor IAP (Phoenix ANG)	5	5	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ARIZONA (Continued)																			
AIR FORCE (Continued)																			
Tucson IAP (Arizona ANG)	13	2	0	11	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0
Williams AFB	16	16	0	0	0	16	0	0	2	4	6	0	1	1	2	0	0	2	0
AIR FORCE TOTALS	134	121	2	11	9	114	7	0	30	32	18	0	1	9	4	0	3	7	1
ARIZONA TOTALS	327	314	2	11	28	286	7	1	31	33	35	1	1	9	5	17	3	9	19
ARKANSAS																			
ARMY																			
AFRC North Little Rock (Pike)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Chaffee	34	34	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0
Pine Bluff Arsenal	66	66	0	0	0	58	0	0	0	31	0	0	0	29	0	0	23	0	0
USARC Arkadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Blytheville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Camden	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Conway	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Dorado (02)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Dorado (Garrett)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fayetteville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (1368)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (241)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (2465)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (ECS 15)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (NCO Academy)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Smith	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Harrison	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ARKANSAS (Continued)																			
ARMY (Continued)																			
USARC Hot Springs	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jonesboro	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Little Rock (ASF 19)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Little Rock (Finkbeiner)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Little Rock (Terry)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Monticello	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Nashville, AR	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pine Bluff	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Russellville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Texarkana 01	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Texarkana 02	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC West Memphis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**217**	**217**	**0**	**0**	**116**	**92**	**0**	**1**	**0**	**31**	**0**	**0**	**0**	**29**	**0**	**0**	**23**	**0**	**0**
AIR FORCE																			
Eaker AFB	10	10	0	0	0	10	0	0	1	2	7	0	0	0	0	0	0	0	0
Fort Smith MAP	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Springs Field	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Rock AFB	53	53	0	0	0	53	0	0	0	20	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	**65**	**64**	**0**	**1**	**0**	**63**	**0**	**0**	**1**	**22**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
ARKANSAS TOTALS	**282**	**281**	**0**	**1**	**116**	**155**	**0**	**1**	**1**	**53**	**7**	**0**	**0**	**29**	**0**	**0**	**23**	**0**	**0**
CALIFORNIA																			
ARMY																			
AFRC Concord	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1

Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	IJ	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
ARMY (Continued)																			
AFRC Fresno	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Los Alamitos (ASF 28A)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Roberts	38	38	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0
East Fort Baker	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Cronkite	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Hunter Liggett	21	21	0	0	0	21	0	0	0	0	0	21	0	0	0	0	0	0	0
Fort Irwin	36	36	0	0	0	36	0	0	0	0	0	16	0	0	0	0	0	0	0
Fort MacArthur	18	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Ord	166	166	0	0	0	166	0	0	0	0	3	9	0	0	4	3	0	4	3
H.F. Radio Receiver, Santa Rosa	3	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
Hamilton Army Air Field	17	17	0	0	0	0	0	17	0	1	0	0	0	0	1	0	0	1	0
NG Camp Elliott	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Chinese Camp	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oakland Army Base	7	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Presidio of Monterey	14	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0
Presidio of San Francisco	35	35	0	0	0	35	0	0	0	0	0	31	0	0	0	0	0	0	0
Rio Vista RES Training Area	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0
Riverbank AAP	11	11	0	0	0	11	0	0	0	5	6	0	5	0	3	3	0	3	3
Sacramento AD	15	15	0	0	0	15	0	0	0	0	8	1	0	1	3	3	1	1	5
SAT COM	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Sierra Army Depot	35	35	0	0	0	35	0	0	16	0	11	8	0	0	0	3	0	0	3
Sloughouse	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bakersfield	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bell (AMSA 15)	22	22	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1

Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
ARMY (Continued)																			
USARC Camp Pendleton	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chico	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clovis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Monte	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Ord (AMSA 14)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fresno (AMSA 14-G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Long Beach	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Los Alamitos (ECS 16)	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Los Angeles 01	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Los Angeles 02	4	4	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0
USARC Modesto	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mountain View	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norco	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pasadena, CA	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC San Bernardino (AMSA 19G)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC San Diego	3	3	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0
USARC San Jose (AMSA 12)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC San Pablo	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Santa Ana	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Santa Barbara	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Santa Rosa	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Stanton (Garden Grove)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sunnyvale	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Upland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
CALIFORNIA (Continued)																				
ARMY (Continued)																				
USARC Vallejo	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Van Nuys	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Van Nuys Maintenance Shop	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	619	619	0	0	193	403	3	22	16	6	28	88	5	1	11	12	1	9	14	
DEPARTMENT OF NAVY																				
CBC Port Hueneme	23	23	0	0	0	17	6	0	8	0	3	12	0	0	0	15	1	0	15	
DoD Housing Facility, Novato	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FASOTRAGRUPACDET Warner Springs	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	
MCAGCC 29 Palms	28	28	0	0	0	28	0	0	0	0	28	0	0	0	0	28	0	0	28	
MCAS El Toro	23	22	1	0	0	22	0	1	0	0	22	1	0	0	0	23	0	0	23	
MCAS Tustin	16	15	1	0	0	6	9	0	4	1	1	9	0	0	1	10	1	0	11	
MCB Camp Pendleton	26	26	0	0	0	26	0	0	0	0	26	0	0	0	0	26	1	0	26	
MCLB Barstow	38	38	0	0	0	38	0	0	0	0	38	0	0	0	0	38	0	2	38	
MCMWTC Bridgeport	9	9	0	0	0	9	0	0	0	0	9	0	0	0	0	9	1	0	9	
MCRD San Diego	2	2	0	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2	
NAF El Centro	17	17	0	0	0	2	15	0	2	0	0	15	0	0	0	15	0	1	15	
NALF Crows Landing	7	7	0	0	0	2	4	0	2	0	0	4	0	0	0	4	1	0	4	
NALF San Clemente Island	15	15	0	0	0	7	8	0	7	0	0	8	0	0	0	8	0	0	8	
NAS Alameda	20	20	0	0	0	20	0	0	0	0	20	0	0	0	0	20	0	0	20	
NAS Lemoore	17	17	0	0	0	17	0	0	0	0	17	0	0	0	0	17	1	0	18	
NAS Miramar	16	10	6	0	0	10	0	6	3	0	6	7	0	0	0	13	1	0	13	
NAS Moffett Field	26	26	0	0	0	0	23	3	0	0	0	22	0	0	0	21	0	3	25	
NAS Moffett Field Outlying Areas	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NAS North Island	12	12	0	0	0	7	5	0	1	0	6	5	0	0	0	11	0	4	11
NAVFAC Big Sur	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVFAC Centerville Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVHOSP Long Beach	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVMEDCOMNWREG Oakland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVPETOFF San Pedro	8	8	0	0	0	3	5	0	0	0	3	5	0	0	0	8	0	0	8
NAVPETRES Tupman	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVPHIBASE Coronado	5	5	0	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
NCS Stockton	6	6	0	0	0	6	0	0	1	0	5	0	0	0	0	5	0	0	7
NESEC San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIROP Pomona	3	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
NIROP Sunnyvale	16	16	0	0	0	16	0	0	3	8	5	0	0	0	0	10	0	0	10
NOSC Morris Dam Facility Azusa	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
NOSC San Diego	9	9	0	0	0	5	4	0	5	0	0	0	0	0	0	0	0	0	0
NPGS Monterey	2	2	0	0	0	1	1	0	0	0	0	2	0	0	0	2	0	0	3
NRTF Dixon	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
NS Long Beach	7	7	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0
NS Long Beach Navy Family Housing	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS San Diego	12	8	4	0	0	1	7	4	1	0	0	10	0	0	0	10	0	1	10
NS T I Hunter's Point Annex	26	25	1	0	0	25	0	1	2	0	23	0	0	0	0	22	8	3	32
NS Treasure Island	26	26	0	0	0	22	4	0	1	0	20	4	0	0	0	24	0	0	24
NSB San Diego	4	4	0	0	0	1	3	0	1	0	0	2	0	0	0	0	0	0	0
NSC Oakland	17	8	9	0	0	7	1	9	4	0	0	8	0	0	0	8	0	0	8

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

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		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
CALIFORNIA (Continued)																				
DEPARTMENT OF NAVY (Continued)																				
NSC Oakland, Alameda Annex	2	2	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	1	
NSC Oakland, Fuel Depot, Richmond	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	4	0	0	4	
NSC San Diego	7	7	0	0	0	4	3	0	4	0	0	3	0	0	0	3	0	0	3	
NSGA Skaggs Island	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NSY Long Beach	7	7	0	0	0	0	7	0	0	0	0	7	0	0	0	0	1	0	0	
NSY Mare Island	30	27	0	3	0	26	1	3	1	0	23	3	0	0	0	18	0	3	18	
NTC San Diego	3	3	0	0	0	1	2	0	1	0	0	2	0	0	0	2	0	0	2	
NUWES SOCAL DET San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NWC China Lake	45	45	0	0	0	45	0	0	28	0	17	0	0	0	0	16	0	1	16	
NWS Concord	30	30	0	0	0	30	0	0	7	7	16	0	0	0	7	16	0	0	23	
NWS Seal Beach	68	68	0	0	0	18	27	23	14	0	4	24	0	0	0	28	0	0	28	
NWS Seal Beach Corona DET	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
NWS Seal Beach Fallbrook Annex	10	10	0	0	0	4	6	0	4	0	0	5	0	0	0	5	0	0	5	
OLF Imperial Beach	5	5	0	0	0	1	4	0	1	0	0	4	0	0	0	4	0	0	4	
PMTC Point Mugu	18	18	0	0	0	9	9	0	3	0	6	9	0	0	0	15	0	0	15	
Salton Sea Test Range	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Singer Education Div, Imperial Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SWNAVFACENGCOM San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WESTNAVFACENGCOM San Bruno	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	690	657	10	3	12	440	178	50	109	16	301	191	0	0	8	468	16	18	484	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
AIR FORCE																			
AFP No. 19, San Diego	6	6	0	0	0	6	0	0	1	1	4	0	0	0	5	0	0	5	0
AFP No. 42, Palmdale	27	27	0	0	0	27	0	0	0	24	3	0	0	0	0	0	0	0	0
AFP No. 70, Folsom	12	1	11	0	0	1	11	0	0	0	1	0	0	0	0	0	0	0	0
Beale AFB	24	24	0	0	0	24	0	0	1	2	1	0	3	2	0	0	1	1	0
Castle AFB	33	33	0	0	0	33	0	0	0	6	15	0	4	6	0	0	6	0	0
Costa Mesa AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Crescent City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Edwards AFB	40	0	40	0	0	0	40	0	0	0	40	0	0	0	0	0	0	0	0
Fresno ANG	4	4	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0
George AFB	67	67	0	0	0	67	0	0	0	10	0	0	0	4	0	0	4	0	0
Hayward MAP	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles AFS	33	33	0	0	0	33	0	0	0	22	2	0	0	19	0	0	10	9	0
March AFB	42	42	0	0	0	42	0	0	2	12	4	0	0	4	8	0	0	0	0
Mather AFB	69	69	0	0	0	69	0	0	10	30	5	0	8	0	0	0	0	0	0
McClellan AFB	177	157	20	0	0	157	20	0	9	0	144	0	2	0	144	0	0	144	0
Mt. Disappointment	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Laguna AFS	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Mt. Marie (ANG)	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Mastell RRS	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
North Highlands AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Norton AFB	23	22	0	0	5	22	0	0	1	19	3	0	0	0	0	0	0	0	0
Onizuka AFS	5	5	0	0	0	5	0	0	5	0	4	1	0	0	0	0	0	0	0
Ontario IAP	6	5	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Paso Robles AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Diego AGS	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
CALIFORNIA (Continued)																				
AIR FORCE (Continued)																				
San Francisco (WRCE)	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
San Pedro Hill AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sepulveda AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	
Travis AFB	27	27	0	0	1	27	0	0	2	5	5	0	0	0	0	0	0	0	0	
Vandenberg AFB	49	49	0	0	0	49	0	0	21	3	1	0	1	2	1	0	2	0	1	
AIR FORCE TOTALS	678	580	98	0	9	565	102	2	53	134	237	1	18	37	158	0	23	159	1	
DEFENSE LOGISTICS AGENCY																				
DDTC Tracy	32	32	0	0	0	32	0	0	18	2	12	0	0	2	1	11	2	1	11	
DESP Estero Bay	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	
DESP Norwalk	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
DESP Ozol	2	2	0	0	0	2	0	0	0	2	0	0	0	1	1	0	1	1	0	
DESP San Pedro	2	2	0	0	0	2	0	0	0	2	0	0	0	0	0	2	0	0	2	
Sharpe Army Depot	38	38	0	0	0	38	0	0	0	1	37	0	1	0	2	35	2	0	35	
DEFENSE LOGISTICS AGENCY TOTALS	77	77	0	0	0	77	0	0	18	7	52	0	1	3	4	51	5	2	51	
CALIFORNIA TOTALS	2,064	1,933	128	3	214	1,485	283	74	196	163	618	280	24	41	151	531	45	185	550	
COLORADO																				
ARMY																				
AFRC Boulder	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Fort Carson	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fitzsimmons Army Med Center	25	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fort Carson	48	48	0	0	0	48	0	0	0	0	23	0	0	0	0	0	0	0	0	
Pueblo Depot Activity	35	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

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		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
COLORADO (Continued)																			
ARMY (Continued)																			
Rocky Mountain Arsenal	155	155	0	0	0	155	0	0	0	153	2	0	0	1	153	0	1	153	0
USARC Aurora 01	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Aurora 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Commerce City (AMSA 22)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Denver	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Carson (ECS 42)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Collins (AMSA 21G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pueblo	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	302	302	0	0	39	263	0	0	0	153	25	0	0	1	153	0	1	153	0
DEPARTMENT OF NAVY																			
NAVPETRES Anvil Points Facility	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
AFP PIKS	44	44	0	0	0	44	0	0	0	34	0	0	7	12	6	8	12	6	8
Buckley ANG	13	13	0	0	0	13	0	0	0	13	0	0	0	11	2	0	0	0	2
Cheyenne Mountain	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
Greely AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Lowry AFB	15	15	0	0	0	15	0	0	6	0	9	0	0	0	0	0	0	0	0
Peterson	9	9	0	0	0	9	0	0	7	8	1	0	2	0	0	0	0	0	0
Pinkan Center AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
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		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
COLORADO (Continued)																			
AIR FORCE (Continued)																			
USAF Academy	11	11	0	0	2	11	0	0	3	3	8	0	1	0	0	0	0	0	0
AIR FORCE TOTALS	97	93	4	0	2	92	4	0	16	58	18	2	10	23	9	10	12	7	12
COLORADO TOTALS	400	396	4	0	42	355	4	0	16	211	43	2	10	24	162	10	13	160	12
CONNECTICUT																			
ARMY																			
Family Housing Manchester, CT 25	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Milford, CT 17	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing New Brittain, CT 57	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Portland, CT 36	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Shelton, CT 74	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Westport, CT 73	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Stratford Army Engine Plant	9	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bridgeport	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Danbury	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC East Windsor	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fairfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hartford	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Middleton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Milford	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Haven	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Waterbury	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CONNECTICUT (Continued)																			
ARMY (Continued)																			
USARC Windsor Locks (AMSA 72G)	11	11	0	0	8	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	78	78	0	0	62	9	0	9	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NSB New London	13	13	0	0	0	13	0	0	0	0	13	0	0	0	0	11	1	0	11
NUSC East Lyme	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NUSC New London	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWIRP Bloomfield	6	6	0	0	0	0	6	0	0	0	0	6	0	0	0	6	0	0	6
DEPARTMENT OF NAVY TOTALS	21	21	0	0	1	14	6	0	0	0	13	6	0	0	0	17	1	0	17
AIR FORCE																			
Bradley ANG	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange AGS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	3	3	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0
CONNECTICUT TOTALS	102	102	0	0	63	26	6	9	0	0	15	6	0	0	0	17	1	0	17
DELAWARE																			
ARMY																			
NG New Castle	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site, Rehoboth	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dover	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Lewes	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC New Castle	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Seaford	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
DELAWARE (Continued)																			
ARMY (Continued)																			
USARC Wilmington, DE	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	23	23	0	0	18	2	0	3	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NAVRESFAC Lewes	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Dover AFB	56	56	0	0	0	56	0	0	25	2	25	0	0	0	0	0	0	0	0
Greater Wilmington APT (DE ANG)	6	6	0	0	0	6	0	0	1	1	4	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	62	62	0	0	0	62	0	0	26	3	29	0	0	1	0	0	0	1	0
DELAWARE TOTALS	86	86	0	0	19	64	0	3	26	3	29	0	0	1	0	0	0	1	0
DISTRICT OF COLUMBIA																			
ARMY																			
Camp Simms	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0
Fort McNair	7	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Walter Reed Army Medical Center	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	11	11	0	0	0	8	0	3	0	0	0	0	0	1	0	0	1	0	0
DEPARTMENT OF NAVY																			
COMNAVDIST Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NAVSECSTA Washington DC	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
DISTRICT OF COLUMBIA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NS Anacostia	3	3	0	0	0	1	2	0	0	0	1	2	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	6	6	0	0	2	1	2	1	0	0	1	2	0	0	0	0	0	1	1
AIR FORCE																			
Bolling AFB	6	6	0	0	0	5	1	0	0	2	4	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	6	6	0	0	0	5	1	0	0	2	4	0	0	1	0	0	0	1	0
DISTRICT OF COLUMBIA TOTALS	23	23	0	0	2	14	3	4	0	2	5	2	0	2	0	0	1	2	1
FLORIDA																			
ARMY																			
AFRC Daytona Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARRCOM Orlando Facility	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Supply Facility, 49-A	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Blanding	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Coral Gables	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Lauderdale (NININGER)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gainesville (1300)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gainesville (Layton)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hollywood (AFA 48A)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Jacksonville (Burpee)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jacksonville (Milam)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jacksonville (Phillips)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kissimmee	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lakeland	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
FLORIDA (Continued)																			
ARMY (Continued)																			
USARC Melbourne	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Miami (AMSA 47G)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Milton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ocala	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (ASF 49)	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (ECS McCoy Annex)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (McCoy 03)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (Orange County)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Palatka	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Palatka (AMSA 55W)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Panama City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pensacola	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Perry	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Port Charlotte	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Petersburg (AMSA 51M)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Petersburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Taft	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tallahassee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tampa	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC West Palm Beach	2	2	0	0	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0
USARC West Palm Beach (Babcock)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
FLORIDA (Continued)																			
ARMY (Continued)																			
USARC West Palm Beach (Gun Club)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	142	142	0	0	128	5	0	6	0	0	0	0	0	2	0	0	2	0	0
DEPARTMENT OF NAVY																			
NAS Cecil Field	19	19	0	0	0	12	0	0	0	1	18	0	0	0	0	14	0	0	14
NAS Jacksonville	47	47	0	0	0	0	47	0	0	0	0	17	0	0	0	8	1	2	9
NAS Key West	14	14	0	0	0	11	3	0	2	1	7	3	0	0	0	5	1	0	5
NAS Pensacola	38	38	0	0	0	8	1	0	0	0	36	0	0	2	0	25	2	0	25
NAS Richmond	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAS Whiting Field	24	24	0	0	1	20	1	2	3	0	15	4	0	1	0	13	1	0	13
NCSC Panama City	9	9	0	0	0	9	0	0	1	0	0	8	0	0	0	6	0	0	6
NRL UWS REF Det Orlando	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NS Mayport	16	16	0	0	2	10	0	0	0	0	11	3	0	0	0	10	1	0	10
NSGA Homestead	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSWC Det Ft. Lauderdale	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NTC Orlando	10	10	0	0	4	6	0	0	2	0	4	0	0	0	0	4	0	0	4
NTTC Pensacola	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
NUSC Ft. Lauderdale	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NUSC West Palm Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	184	184	0	0	11	77	54	2	8	2	92	35	0	3	0	85	6	2	86
AIR FORCE																			
Cape Canaveral	2	2	0	0	0	0	0	0	0	0	C	0	0	0	2	0	0	0	0
Cross City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eglin AFB	40	1	39	0	0	1	39	0	0	1	39	0	0	1	0	0	0	1	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
FLORIDA (Continued)																			
AIR FORCE (Continued)																			
Ft. Lonesome AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Homestead AFB	28	28	0	0	0	28	0	0	0	8	1	0	0	1	0	0	1	0	0
Hurlburt AFB	11	11	0	0	0	11	0	0	0	0	11	0	0	0	0	11	0	0	11
Jacksonville ANG	10	10	0	0	0	8	2	0	0	0	10	0	0	0	0	8	0	0	8
MacDill AFB	55	55	0	0	0	55	0	0	0	10	2	0	0	2	0	0	2	0	0
Patrick AFB	35	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0
Tyndall AFB	29	29	0	0	0	28	0	0	16	1	25	0	0	0	1	8	0	1	8
AIR FORCE TOTALS	212	173	39	0	2	166	41	0	16	20	88	0	0	4	3	27	3	2	27
DEFENSE LOGISTICS AGENCY																			
DFSP Lynn Haven	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DFSP Tampa	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	1
FLORIDA TOTALS	540	501	39	0	141	250	95	8	25	22	181	35	0	9	3	113	11	4	114
GEORGIA																			
ARMY																			
AFRC Waycross	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Benning	87	87	0	0	0	87	0	0	0	0	2	0	0	0	0	1	1	0	1
Fort Gillem	5	5	0	0	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0
Fort Gordon	78	78	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort McPherson	9	9	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
Fort Stewart	85	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunter Army Airfield	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
GEORGIA (Continued)																			
ARMY (Continued)																			
Hunter ILS Middle Marker	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Athens	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Augusta 02	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Carrollton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chamblee	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (Macon Road)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (Midtown Dr.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dobbins AFB	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dublin	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC East Point Atlanta	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Forest Park	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Valley	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gainesville	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Macon	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rome	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Savannah	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tifton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**361**	**361**	**0**	**0**	**86**	**176**	**0**	**14**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**
DEPARTMENT OF NAVY																			
MCLB Albany	12	12	0	0	0	12	0	0	0	0	11	1	0	0	0	12	0	0	12
NSB Kings Bay	16	16	0	0	0	16	0	0	0	0	0	16	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	**28**	**28**	**0**	**0**	**0**	**28**	**0**	**0**	**0**	**0**	**11**	**17**	**0**	**0**	**0**	**12**	**0**	**0**	**12**

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
GEORGIA (Continued)																			
AIR FORCE																			
AFP No. 6 Marietta	15	15	0	0	0	14	1	0	0	0	1	0	0	0	0	0	0	0	0
Dobbins AFB	7	7	0	0	0	7	0	0	2	1	4	0	0	0	0	0	0	0	0
Hunter 2	2	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
L.B. Wilson AD	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Lewis B. Wilson	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
McCollon AGS	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
McKinnon AGS	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
Moody AFB	20	20	0	0	0	20	0	0	0	2	0	0	0	2	0	0	2	0	0
Robins AFB	23	23	0	0	0	23	0	0	7	14	3	0	0	7	4	0	4	4	0
Savannah FTS ANG	4	2	2	0	0	4	0	0	2	0	2	0	0	0	0	2	0	0	2
Savannah IAP ANG	7	7	0	0	0	7	0	0	0	0	7	0	0	0	0	7	0	0	7
AIR FORCE TOTALS	95	76	19	0	0	77	16	1	11	17	17	17	0	9	4	26	6	4	26
GEORGIA TOTALS	484	465	19	0	86	281	16	15	11	18	30	34	0	9	4	39	7	4	39
GUAM																			
DEPARTMENT OF NAVY																			
NAS Agana	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
NAVCAMS WESTPAC Guam	11	11	0	0	6	5	0	0	3	0	2	0	0	0	0	2	0	0	2
NAVMAG Guam	5	5	0	0	2	3	0	0	2	0	0	1	0	0	0	1	0	0	1
NAVREGDENCEN Guam	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	1
NAVSHIPREPFAC Guam	5	5	0	0	3	2	0	0	0	0	2	0	0	0	0	2	0	0	2
NS Guam	17	17	0	0	12	5	0	0	0	0	3	2	0	0	0	5	0	0	5
NSD Guam	4	4	0	0	2	2	0	0	1	0	1	0	0	0	0	1	0	0	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
GUAM (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
PWC Guam	3	3	0	0	0	3	0	0	0	1	2	0	0	0	1	2	1	0	3
DEPARTMENT OF NAVY TOTALS	48	48	0	0	25	23	0	0	6	1	12	4	0	0	1	16	1	1	17
AIR FORCE																			
Andersen AFB	54	54	0	0	3	51	0	0	19	6	10	0	0	1	1	0	1	1	0
AIR FORCE TOTALS	54	54	0	0	3	51	0	0	19	6	10	0	0	1	1	0	1	1	0
GUAM TOTALS	102	102	0	0	28	74	0	0	25	7	22	4	0	1	2	16	2	2	17
HAWAII																			
ARMY																			
Diamond Head Crater	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Kamehameha	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Shafter	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Kapalama Mil Reservation	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Kilauea Military Reservation	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Kipapa Army Ammo Storage	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Makua Military Reservation	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 3 and 4	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pohakuloa Training Area	7	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Schofield Barracks	19	19	0	0	0	0	18	0	0	0	3	15	0	1	0	2	0	1	2
Tripler Army Medical Center	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Waiawa Gulch Storage Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	54	54	0	0	0	33	18	0	0	0	3	15	0	1	0	2	0	1	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
HAWAII (Continued)																				
DEPARTMENT OF NAVY																				
Camp H.M. Smith, Oahu	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	
DRMO Hawaii	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DRMO Pearl City Junction	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	
FLTRNGGRA Pearl Harbor	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
INACTSHIPDET Pearl Harbor ♦	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MCAS Kaneohe Bay	20	20	0	0	15	4	1	0	2	0	0	2	0	0	0	2	0	0	2	
NAS Barbers Point	10	10	0	0	7	3	0	0	1	0	1	1	0	0	0	2	0	0	2	
NAVENPVNTMEDU No. 6 Pearl Harbor	2	2	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	0	
NAVMAG Lualualei	7	7	0	0	3	4	0	0	2	0	0	2	0	0	0	2	0	0	2	
NCTAMS EASTPAC	14	14	0	0	10	3	1	0	0	0	2	2	0	0	0	5	0	0	5	
NS Pearl Harbor ♦	5	5	0	0	1	1	3	0	0	0	0	4	0	0	1	4	0	0	5	
NSB Pearl Harbor ♦	2	2	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	1	
NSC Pearl Harbor ♦	10	10	0	0	5	5	0	0	1	0	4	0	0	0	0	4	0	0	4	
NSY Pearl Harbor ♦	15	15	0	0	7	8	0	0	2	1	4	1	0	1	0	5	1	0	5	
Pearl Harbor Service Station	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PMRF Barking Sands	3	3	0	0	0	3	0	0	1	0	2	0	0	0	0	2	0	0	2	
PWC Pearl Harbor ♦	3	3	0	0	1	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
Waiawa Shaft Pearl City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Waikane Valley Impact Area Kaneohe	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	**99**	**99**	**0**	**0**	**55**	**37**	**6**	**0**	**10**	**1**	**16**	**15**	**0**	**1**	**1**	**32**	**1**	**0**	**32**	
AIR FORCE																				
Bellows AFB	3	3	0	0	0	3	0	0	0	0	2	0	0	0	0	1	0	0	1	
General Lyman	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
HAWAII (Continued)																			
AIR FORCE (Continued)																			
Hickam AFB	13	13	0	0	0	13	0	0	0	1	0	0	0	1	0	0	1	0	0
Hickam POL	12	12	0	0	0	12	0	0	0	0	12	0	0	0	0	12	0	1	11
Hilo COMM AGS	2	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
HQ PACAF (Hickam)	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnston Island	5	5	0	0	0	5	0	0	0	2	0	0	0	2	0	0	2	0	0
Kaala AFS	8	8	0	0	0	8	0	0	2	3	0	0	0	3	0	0	3	0	0
Kaena Pt Station	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Kahalui AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
Kokee AFS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
Maui AFS	13	13	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	0
Palehua Solar Obs	2	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0
Punamano AFS	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Wheeler AFB	8	8	0	0	0	8	0	0	0	0	5	0	0	0	0	5	0	0	5
AIR FORCE TOTALS	77	71	6	0	0	73	4	0	6	19	19	4	0	6	0	22	6	1	21
HAWAII TOTALS	230	224	6	0	55	143	28	0	16	20	38	34	0	8	1	56	7	2	55
IDAHO																			
ARMY																			
AFRC Idaho Falls	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Broken Kettle Training Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG ARCO AEC Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Bonneville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Buhl	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Gooding	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
IDAHO (Continued)																				
ARMY (Continued)																				
NG Hailey	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Idaho Falls	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Kelly Canyon	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Kimana	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Orchard Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Saint Anthony	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Twin Falls City	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Boise (AMSA 3)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Coeur D'Alene	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rexburg	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Twin Falls	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	**50**	**50**	**0**	**0**	**38**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
AIR FORCE																				
Boise ANG	5	5	0	0	0	5	0	0	3	0	2	0	0	0	2	0	0	0	0	
Gowen Field, Boise ANG	13	13	0	0	0	13	0	0	0	0	4	0	0	2	0	4	2	0	4	
Mountain Home AFB	22	22	0	0	4	22	0	0	0	4	11	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	**40**	**40**	**0**	**0**	**4**	**40**	**0**	**0**	**3**	**4**	**17**	**0**	**0**	**2**	**2**	**4**	**2**	**0**	**4**	
IDAHO TOTALS	**90**	**90**	**0**	**0**	**42**	**52**	**0**	**0**	**3**	**4**	**17**	**0**	**0**	**2**	**2**	**4**	**2**	**0**	**4**	
ILLINOIS																				
ARMY																				
AFRC Joliet (McDonough)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Waukegan	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fort Sheridan	10	10	0	0	0	7	0	3	0	1	0	0	0	1	0	0	1	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
ILLINOIS (Continued)																				
ARMY (Continued)																				
Joliet AAP	53	53	0	0	0	53	0	0	0	0	53	0	0	3	0	50	3	0	50	
Maintenance Center, N. Riverside	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG O'Hare IAP	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG USA Training Area Joliet	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rock Island Arsenal	31	31	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	
Savanna Depot Activity	72	72	0	0	10	60	0	0	30	0	29	0	0	0	2	0	2	2	0	
St. Louis Area Support Center	40	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Arlington Heights	6	6	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	
USARC Aurora	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Aurora (Howell Pl)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Aurora (Sullivan Rd)	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Belleville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bloomington	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Canton, IL	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Centralia	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chicago (Bryn Mawr Ave.)	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Chicago (Gibson)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chicago (Kedzie Ave.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chicago (O'Hare Field)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chicago (Pulaski)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Danville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Decatur	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
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	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD				RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F		C	U	F
ILLINOIS (Continued)																				
ARMY (Continued)																				
USARC East St. Louis	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Fairfield, IL	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Fort Sheridan (82)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Fort Sheridan (AMSA 47)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Fort Sheridan (N. Shore)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Galesburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Glenview (ASF 26)	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Harvey	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Homewood	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Joliet (Railroad)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Kankakee	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Marion, IL	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Maywood (AMSA 46)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Orland Park (AMSA 45)	21	21	0	0	20	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Peoria (AMSA 48)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Peoria (Northmore)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Peru (Veterans Memorial)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Quincy	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Rockford (15th Ave.)	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Rockford (Arthur Avenue)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Rockford (Fisk)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Scott AFB (ASF 44)	24	24	0	0	24	0	0	0	0	0	0	0	0	0	0	0		0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
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		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
ILLINOIS (Continued)																				
ARMY (Continued)																				
USARC Springfield, IL	4	4	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Urbana	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Wood River	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	475	475	0	0	263	194	0	16	30	1	82	0	0	4	2	50	6	2	50	
DEPARTMENT OF NAVY																				
Libertyville Nike Site	7	7	0	0	0	7	0	0	0	0	7	0	0	0	0	5	0	0	6	
NAS Glenview	9	9	0	0	0	0	9	0	0	0	0	9	0	0	0	5	0	0	5	
NTC Great Lakes	14	14	0	0	0	8	6	0	8	0	0	5	0	0	0	5	0	0	7	
DEPARTMENT OF NAVY TOTALS	30	30	0	0	0	15	15	0	8	0	7	14	0	0	0	15	0	0	18	
AIR FORCE																				
Capital ANG	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	
Chanute AFB	31	31	0	0	0	31	0	0	2	17	10	0	8	0	0	0	0	0	0	
Greater Peoria ANG	6	6	0	0	0	6	0	0	0	1	0	0	1	0	0	0	0	0	0	
O'Hare Air Reserve	14	14	0	0	0	14	0	0	8	6	0	0	4	0	0	1	0	0	1	
O'Hare RTC	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Scott AFB	8	8	0	0	0	8	0	0	0	8	0	0	0	0	8	0	0	8	0	
AIR FORCE TOTALS	62	61	0	1	0	59	2	1	10	32	12	0	13	0	8	1	0	8	1	
ILLINOIS TOTALS	567	566	0	1	263	268	17	17	48	33	101	14	13	4	10	66	6	10	69	
INDIANA																				
ARMY																				
AFRC Bloomington	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Evansville	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
INDIANA (Continued)																			
ARMY (Continued)																			
Crane Army Ammunition Activity	76	76	0	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Benjamin Harrison	15	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0
Indiana AAP	25	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson Proving Ground	37	37	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0
Newport Army Ammunition Plant	13	13	0	0	1	1	4	1	0	0	6	4	0	0	0	5	0	0	5
NG AFRTA	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Edinburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Benjamin Harrison (McGee)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Wayne (Gillespie)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gary	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Indianapolis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jeffersonville	18	18	0	0	14	0	0	4	0	0	0	0	0	0	0	0	0	0	0
USARC Lafayette, IN	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Lake Station	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC North Judson	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Peru (Grissom AFB)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Richmond	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rushville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Scottsburg	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC South Bend (AMSA 39)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Terre Haute	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**290**	**290**	**0**	**0**	**117**	**154**	**4**	**8**	**0**	**0**	**6**	**4**	**0**	**0**	**0**	**5**	**0**	**0**	**5**

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
INDIANA (Continued)																				
DEPARTMENT OF NAVY																				
NAC Indianapolis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NMCRC Gary	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NWSC Crane	31	31	0	0	0	2	29	0	0	0	0	30	0	0	0	29	1	0	29	
DEPARTMENT OF NAVY TOTALS	33	33	0	0	2	2	29	0	0	0	0	30	0	0	0	29	1	0	29	
AIR FORCE																				
Fort Wayne ANG	4	4	0	0	0	1	3	0	0	1	3	0	0	0	0	0	0	0	0	
Grissom AFB	11	11	0	0	0	10	1	0	1	0	10	0	0	0	0	3	0	0	2	
Hulman ANG	6	6	0	0	0	2	4	0	2	0	4	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	21	21	0	0	0	13	8	0	3	1	17	0	0	0	0	3	0	0	2	
DEFENSE LOGISTICS AGENCY																				
DNSC Newhaven	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	
INDIANA TOTALS	345	345	0	0	119	170	41	8	3	2	23	34	0	1	0	37	2	0	36	
IOWA																				
ARMY																				
AFRC Dubuque	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Waterloo	5	5	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	
Fort Des Moines	9	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
Iowa Army Ammunition Plant	43	43	0	0	0	43	0	0	0	0	43	0	0	1	1	30	1	1	30	
USARC Ames	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Cedar Rapids	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
IOWA (Continued)																			
ARMY (Continued)																			
USARC Cherokee	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Creston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Davenport	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Decorah	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Des Moines (63/64/139)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Des Moines (ASF 60)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Des Moines (Bldg. 100)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Dodge	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Garner, IA	6	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Iowa City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Middletown	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mt. Pleasant	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muscatine	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ottumwa	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pocahontas	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sac City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sioux City	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington (AMSA 30)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington, IA	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**178**	**178**	**0**	**0**	**120**	**52**	**0**	**6**	**0**	**0**	**43**	**0**	**0**	**1**	**1**	**30**	**1**	**1**	**30**
AIR FORCE																			
Des Moines ANG	4	4	0	0	0	4	0	0	0	4	0	0	0	0	4	0	0	4	0
Fort Dodge	1	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
IOWA (Continued)																				
AIR FORCE (Continued)																				
Sioux City ANG	3	3	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	8	8	0	0	0	4	4	0	0	4	4	0	0	0	5	0	0	4	0	
IOWA TOTALS	186	186	0	0	120	56	4	6	0	4	47	0	0	1	6	30	1	5	30	
KANSAS																				
ARMY																				
AFRC Hutchinson	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Topeka (Menninger)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fort Leavenworth	56	56	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fort Riley	31	31	0	0	0	31	0	0	0	0	2	28	0	1	0	0	4	1	0	
Kansas AAP	38	38	0	0	0	36	0	2	0	0	0	25	0	0	0	0	0	0	0	
NG Smokey Hill	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sunflower AAP	31	31	0	0	0	31	0	0	0	0	11	0	0	0	0	0	0	0	0	
USARC Arkansas City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Baxter Springs	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dodge City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC El Dorado	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Emporia	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Riley (ECS 33)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Ft. Leavenworth	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Ft. Riley (1695)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Ft. Riley (1968)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Garden City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Great Bend	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
KANSAS (Continued)																			
ARMY (Continued)																			
USARC Hays	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Independence	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kansas City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lawrence	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lenexa	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Manhattan	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Olathe (ASF 37)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Osage City	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Osawatomie	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Parsons	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsburg	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salina	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Scott City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sunflower Outdoor TRNG	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Topeka (AMSA 39)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wellington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wichita (Wallace)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wichita 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	279	279	0	0	121	155	0	3	0	0	13	53	0	1	0	0	4	1	0
AIR FORCE																			
Forbes Field	10	10	0	0	0	10	0	0	5	5	0	0	0	0	4	0	0	4	0
McConnell AFB	26	26	0	0	0	26	0	0	3	1	9	0	2	1	0	0	1	0	0
AIR FORCE TOTALS	36	36	0	0	0	36	0	0	8	6	9	0	2	1	4	0	1	4	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
KANSAS (Continued)																			
DEFENSE LOGISTICS AGENCY																			
DIPEF Atchison	3	3	0	0	0	3	0	0	2	1	0	0	0	1	0	0	1	0	0
DEFENSE LOGISTICS AGENCY TOTALS	3	3	0	0	0	3	0	0	2	1	0	0	0	1	0	0	1	0	0
KANSAS TOTALS	318	318	0	0	121	194	0	3	10	7	22	53	2	3	4	0	6	5	0
KENTUCKY																			
ARMY																			
AFRC Hopkinsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Lexington	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue Grass Facility-LBAD	53	53	0	0	0	0	0	53	0	0	0	0	0	0	0	0	0	0	0
Fort Campbell	36	36	0	0	0	1	34	1	0	0	1	35	0	0	1	35	0	1	35
Fort Knox	199	199	0	0	0	199	0	0	0	0	0	0	0	0	0	0	0	0	0
Lexington Facility-LBAD	45	45	0	0	0	21	0	24	0	0	0	0	0	0	0	0	0	0	0
NG Greenville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Somerset	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bardstown	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beattyville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Berea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bowling Green	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Knox (ECS 63)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Georgetown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hardinsburg	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC L. anon	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lexington (Barrow)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lexington (Blue Grass)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
KENTUCKY (Continued)																			
ARMY (Continued)																			
USARC Louisville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Louisville (Bowman Hanger 7)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Louisville (Century)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Louisville (Major)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Madisonville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Maysville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Owensboro	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Paducah 01	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Paducah 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pikeville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	420	420	0	0	85	223	34	78	0	0	1	35	0	0	1	35	0	1	35
DEPARTMENT OF NAVY																			
NOS Louisville	6	6	0	0	0	3	3	0	3	0	0	3	0	0	0	2	0	1	2
DEPARTMENT OF NAVY TOTALS	6	6	0	0	0	3	3	0	3	0	0	3	0	0	0	2	0	1	2
AIR FORCE																			
Standiford Field	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
KENTUCKY TOTALS	427	427	0	0	85	226	38	78	3	0	2	38	0	0	1	37	0	2	37
LOUISIANA																			
ARMY																			
Fort Polk	22	22	0	0	8	12	0	0	6	0	4	4	0	0	0	6	0	0	6

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
LOUISIANA (Continued)																			
ARMY (Continued)																			
Louisiana AAP	7	7	0	0	0	7	0	0	0	0	7	0	0	1	0	6	1	0	6
New Orleans Army Base	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Pearson Ridge	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alexandria, LA	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge (North)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge (Roberts)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge (Saurage)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bogalusa	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bossier City	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Polk (8610)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Polk (ECS 17)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hammond	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Houma	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lafayette	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lake Charles	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Monroe	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans (Canal Street)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans (Diamond)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans (Fleming)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans 05 (Kenner)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Shreveport 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
LOUISIANA (Continued)																				
ARMY (Continued)																				
USARC Slidell	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	107	107	0	0	81	23	0	1	6	0	11	4	0	1	0	12	1	0	12	
DEPARTMENT OF NAVY																				
NAS New Orleans	12	12	0	0	4	3	4	0	0	0	0	8	0	0	0	5	0	0	5	
NSA New Orleans	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
DEPARTMENT OF NAVY TOTALS	14	14	0	0	4	5	4	0	0	0	2	8	0	0	0	7	0	0	7	
AIR FORCE																				
Barksdale AFB	32	32	0	0	0	32	0	0	9	1	0	0	0	0	1	0	0	0	1	
England AFB	42	41	1	0	19	41	1	0	12	2	1	0	0	0	0	0	0	0	0	
Hammond AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
Jackson Barracks	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2	
Lake Charles AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Slidell AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	80	75	5	0	21	73	5	0	21	3	1	2	0	0	1	2	0	0	3	
DEFENSE LOGISTICS AGENCY																				
DNSC Baton Rouge	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	
LOUISIANA TOTALS	202	197	5	0	106	102	9	1	27	3	15	14	0	1	1	21	1	0	22	
MAINE																				
ARMY																				
Bangor IAP	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
MAINE (Continued)																				
ARMY (Continued)																				
NG Caswell	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Riley-Bog Brook	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Auburn	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bangor	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bridgton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dexter	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Saco	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	36	36	0	0	32	3	0	1	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY																				
NAS Brunswick	13	13	0	0	0	13	0	0	1	0	12	0	0	0	0	12	0	0	12	
NAVCOMMU Cutler	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	3	
NSGA Corea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NSGA Winter Harbor	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NSY Portsmouth	13	13	0	0	0	13	0	0	0	0	13	0	0	0	0	12	0	0	12	
DEPARTMENT OF NAVY TOTALS	31	31	0	0	2	26	3	0	1	0	25	3	0	0	0	27	0	0	27	
AIR FORCE																				
Bangor ANG	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	
Loring AFB	45	45	0	0	0	45	0	0	7	3	12	0	3	2	0	0	1	1	0	
South Portland	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	52	47	5	0	0	45	7	0	7	3	14	0	3	2	0	0	1	1	0	
DEFENSE LOGISTICS AGENCY																				
DFSP Casco Bay	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	

(Continued)

Table C-1.
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MAINE (Continued)																			
DEFENSE LOGISTICS AGENCY (Continued)																			
DFSP Searsport	2	2	0	0	0	2	0	0	0	1	0	1	0	1	0	1	1	0	1
DEFENSE LOGISTICS AGENCY TOTALS	3	3	0	0	0	3	0	0	0	1	1	1	0	1	0	2	1	0	2
MAINE TOTALS	122	117	5	0	34	77	10	1	8	4	40	4	3	3	0	29	2	1	29
MARYLAND																			
ARMY																			
Aberdeen Proving Ground	58	58	0	0	0	58	0	0	0	0	1	56	0	0	0	1	0	0	1
Aberdeen PV GRD (Edgewood Area)	12	12	0	0	0	12	0	0	0	0	8	4	0	0	2	8	0	2	8
Blossom Point Field Test Activity	26	26	0	0	0	15	0	0	4	26	0	0	22	0	0	0	0	0	0
Fort Detrick	45	45	0	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort George G. Meade	72	72	0	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Ritchie	5	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Gaithersburg Res Facility	16	16	0	0	0	11	0	5	0	0	0	0	0	0	0	0	0	0	0
Harry Diamond Labs (Adelphi)	39	39	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lauderick Creek Training Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site, Phoenix	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
NG Nike Site, Wayland	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 79, Foster	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Phoenix Mil. Res.	4	4	0	0	0	4	0	0	0	2	0	0	0	2	2	0	2	2	0
USARC Annapolis	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baltimore (Jecelin)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baltimore (Sheridan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baltimore (Turner)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
MARYLAND (Continued)																				
ARMY (Continued)																				
USARC Camp Springs	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Cumberland	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Curtis Bay (AMSA 83)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Curtis Bay (Brandt)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Frederick (Flair)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Gaithersburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Greenspring	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hagerstown	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hagerstown (ASF 111)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hagerstown (Tagg-Zirkle)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Riverdale	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rockville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Westminster	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	**368**	**363**	**0**	**5**	**87**	**260**	**0**	**10**	**4**	**28**	**10**	**60**	**22**	**3**	**4**	**9**	**3**	**4**	**9**	
DEPARTMENT OF NAVY																				
Bloodsworth Archipelago	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CHESDIVNFEC	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
DTRESCEN Annapolis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DTRESCEN Annapolis Bay Head Annex	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
DTRESCEN Bethesda	8	8	0	0	0	0	8	0	0	0	0	7	0	0	1	0	0	0	1	
NAF Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NAS Patuxent River	31	31	0	0	0	31	0	0	19	0	12	0	0	2	1	10	3	0	11	
NAVCOMMU Cheltenham	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
MARYLAND (Continued)																				
DEPARTMENT OF NAVY (Continued)																				
NAVEODTECHCEN Indian Head	9	9	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	
NAVMEDCOM NATCAPREG Bethesda	6	6	0	0	0	0	6	0	0	0	0	6	0	0	0	6	0	0	6	
NAVRECCEN Solomons	2	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
NESEA St. Inigoes	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	
NOS Indian Head	30	29	1	0	24	5	1	0	0	0	5	0	0	0	2	1	0	0	3	
NRL Chesapeake Bay Detachment	8	8	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	
NRL Waldorf	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	0	2	
NRL Washington	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	
NRL Washington, Pomonkey Test Range	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
NS Annapolis	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	
NSWC White Oak	14	14	0	0	0	14	0	0	7	0	7	0	0	0	0	7	0	0	7	
NTC Bainbridge	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
NTIC Suitland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
U.S. Naval Academy	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	
NAVY TOTALS	124	122	2	0	28	77	22	0	48	0	26	15	0	2	4	29	3	0	33	
AIR FORCE																				
Andrews AFB	16	16	0	0	0	16	0	0	0	16	0	0	0	0	16	0	0	16	0	
HQ AFSC, Andrews	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	
Martin Airport ANG	15	11	4	0	0	11	4	0	1	0	10	1	0	0	0	1	0	0	1	
AIR FORCE TOTALS	39	35	4	0	0	35	4	0	1	16	18	1	0	0	16	1	0	16	1	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MARYLAND (Continued)																			
DEFENSE LOGISTICS AGENCY																			
DNSC Curtis Bay	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
MARYLAND TOTALS	532	521	6	5	115	370	26	10	53	44	54	77	22	5	24	39	6	20	43
MASSACHUSETTS																			
ARMY																			
AFRC Chicopee	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auburn	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Family Housing Hull, MA 36	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Natick, MA 17	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort Devens	56	56	0	0	13	2	15	26	0	0	2	41	0	0	0	43	0	0	43
Fort Devens/Sudbury Annex	68	68	0	0	0	11	15	40	0	0	13	55	0	0	0	68	1	1	66
Natick R&D & ENGR Center	8	2	6	0	0	0	2	6	0	0	0	1	0	0	0	0	0	0	0
NG Camp Edwards	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
US Army Materials Technology Lab	19	19	0	0	0	19	0	0	0	0	19	0	0	0	0	0	0	0	0
USARC Attleboro	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brockton (AMSA 66)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsfield	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Roslindale	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Taunton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Worcester	8	8	0	0	5	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	210	204	6	0	66	34	32	77	0	1	34	97	0	0	0	111	1	1	109

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MASSACHUSETTS (Continued)																			
DEPARTMENT OF NAVY																			
NAS South Weymouth	8	8	0	0	0	0	8	0	0	0	0	8	0	0	0	8	0	0	8
NIROP Pittsfield	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSY Boston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWIRP Bedford	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DEPARTMENT OF NAVY TOTALS	12	12	0	0	2	2	8	0	0	0	2	8	0	0	0	10	0	0	10
AIR FORCE																			
AFP No. 28, Everett	4	4	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0
AFP No. 29, Lynn	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Barnes ANG	7	7	0	0	0	7	0	0	0	0	6	0	0	0	0	0	0	0	0
Hanscomb AFB	22	22	0	0	0	22	0	0	0	17	3	0	0	7	0	0	7	0	0
Otis ANG	78	78	0	0	0	78	0	0	0	4	55	0	0	4	8	41	2	2	41
Wellesly AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Westover AFB	19	19	0	0	0	19	0	0	3	4	12	0	6	3	0	1	3	0	1
Worcester AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	143	133	10	0	0	133	10	0	6	25	76	0	6	14	8	42	12	2	42
MASSACHUSETTS TOTALS	365	349	16	0	68	169	50	77	6	26	112	105	6	14	8	163	13	3	161
MICHIGAN																			
ARMY																			
AFRC Saginaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Custer RFTA	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Detroit Arsenal	15	15	0	0	0	15	0	0	0	0	0	15	0	0	0	0	0	0	0
Keweenaw Field Station	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MICHIGAN (Continued)																			
ARMY (Continued)																			
Lima Army Tank Center	16	16	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Grayling Airfield	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
NG Fort Custer Recreation Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontiac Storage Activity	7	7	0	0	0	7	0	0	0	0	0	7	0	0	0	0	0	0	0
Tank-Automotive Command Activity	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ann Arbor	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bad Axe	5	5	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0
USARC Battle Creek (AMSA 42)	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Bay City	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Detroit	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Flint	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fraser	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Grand Rapids	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Inkster	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jackson	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kalamazoo	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Lansing (AMSA 40, SUB1)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Livonia (AMSA 40)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muskegon (AMSA 43)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muksegon (Parslow)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pontiac (Featherstone)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Romulus	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Southfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
MICHIGAN (Continued)																				
ARMY (Continued)																				
USARC Traverse City (AMSA 34)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	157	157	0	0	95	56	0	6	0	1	0	22	0	0	1	0	0	1	0	
AIR FORCE																				
Arkabulta Annex	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
K.I. Sawyer	16	16	0	0	0	16	0	0	3	1	10	0	0	1	0	0	1	0	0	
Phelps Collins ANG	19	19	0	0	0	19	0	0	7	0	10	0	0	0	0	10	0	0	10	
Selfridge ANG	11	11	0	0	0	11	0	0	0	0	9	0	0	0	0	9	0	0	9	
W.K. Kellog Regional Airport	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	6	0	0	6	
Wurtsmith AFB	30	30	0	0	0	30	0	0	4	1	0	0	4	1	0	0	1	0	0	
AIR FORCE TOTALS	84	82	2	0	0	82	2	0	14	2	35	0	4	2	0	25	2	0	25	
DEFENSE LOGISTICS AGENCY																				
DFSP Escanaba	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	
MICHIGAN TOTALS	242	240	2	0	95	139	2	6	14	3	36	22	4	2	1	26	2	1	26	
MINNESOTA																				
ARMY																				
AFRC Rochester	9	9	0	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
AFRC St. Cloud	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
Twin Cities AAP	19	19	0	0	0	18	0	1	0	0	19	0	0	1	8	9	2	8	9	
USARC Brainerd	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Buffalo	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MINNESOTA (Continued)																			
ARMY (Continued)																			
USARC Cambridge	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cannon Falls	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Duluth	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Faribault (Beebe)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fergus Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Snelling (AMSA 22)	35	35	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Le Sueur	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Mankato	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marshall	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Prague	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Paynesville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC So. International Falls	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Joseph (AMSA 23)	10	10	0	0	9	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Wabasha	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Walker	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Willmar	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winona	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winthrop	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Worthington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**178**	**178**	**0**	**0**	**151**	**18**	**0**	**9**	**0**	**0**	**19**	**0**	**0**	**1**	**8**	**9**	**2**	**8**	**9**
DEPARTMENT OF NAVY																			
ASTROGRPDET Bravo	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIROP Fridley	5	5	0	0	0	5	0	0	1	0	4	0	0	0	0	4	2	0	4

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MINNESOTA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NIROP St. Paul	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	8	8	0	0	1	7	0	0	1	0	4	0	0	0	0	4	2	0	4
AIR FORCE																			
Duluth IAP	26	26	0	0	0	23	3	0	4	1	5	0	0	1	0	0	1	0	0
Minn. St. Paul IAP	12	12	0	0	0	12	0	0	2	2	6	0	0	2	1	0	0	3	0
Minn. St. Paul ANG	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	39	38	1	0	0	35	3	0	6	3	11	0	0	3	1	0	1	3	0
MINNESOTA TOTALS	225	224	1	0	152	60	3	9	7	3	34	0	0	4	9	13	5	11	13
MISSISSIPPI																			
ARMY																			
AFRC Jackson	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mississippi AAP	46	46	0	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0
NG Camp McCain	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brookhaven	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenville, MS	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenwood (AMSA 144)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gulfport (Hickey)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Hattiesburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jackson (Scott)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jackson (Terry Road)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Laurel	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lyon (Clarksdale)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MISSISSIPPI (Continued)																			
ARMY (Continued)																			
USARC Meridian	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Natchez	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pascagoula 02	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Starkville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tupelo	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Vicksburg 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Vicksburg 03	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Vicksburg 04	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**136**	**136**	**0**	**0**	**87**	**1**	**0**	**48**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DEPARTMENT OF NAVY																			
CBC Gulfport	9	9	0	0	1	8	0	0	0	0	8	0	0	0	0	3	0	0	3
NAS Meridian	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	**13**	**13**	**0**	**0**	**1**	**8**	**4**	**0**	**0**	**0**	**8**	**4**	**0**	**0**	**0**	**3**	**0**	**0**	**3**
AIR FORCE																			
A.C. Thompson	6	6	0	0	0	6	0	0	0	0	2	4	0	0	0	5	0	0	5
Allen	5	5	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Bay St. Louis	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Columbus AFB	27	27	0	0	0	27	0	0	12	10	0	0	4	2	0	0	0	2	0
Gulfport NCBC	4	4	0	0	0	1	3	0	0	1	3	0	0	1	0	0	1	0	0
Keesler AFB	22	22	0	0	0	22	0	0	0	12	0	1	0	0	0	11	4	0	8
Key Field ANG	10	10	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	**75**	**75**	**0**	**0**	**0**	**57**	**18**	**0**	**12**	**23**	**20**	**5**	**4**	**3**	**0**	**16**	**5**	**2**	**13**
MISSISSIPPI TOTALS	**224**	**224**	**0**	**0**	**88**	**66**	**22**	**48**	**12**	**23**	**28**	**9**	**4**	**3**	**0**	**19**	**5**	**2**	**16**

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
MISSOURI																				
ARMY																				
Camp Clark	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fort Leonard Wood	51	51	0	0	0	51	0	0	0	0	1	50	0	0	0	0	0	0	0	
Gateway AAP	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake City AAP	35	35	0	0	0	35	0	0	0	0	35	0	0	0	0	35	7	0	28	
NG Nike Site 30	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
St. Louis AAP	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
St. Louis Ordnance Plant	17	17	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bethany	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Cape Griardeau	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Columbia	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Farmington	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Leonard Wood (1350)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Leonard Wood (ECS 66)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hannibal	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Independence, MO	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Jefferson City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Joplin	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Kirksville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Kirksville (Grim-Smith)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Maryville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Poplar Bluff	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Richards Gebaur	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rolla	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

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		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MISSOURI (Continued)																			
ARMY (Continued)																			
USARC Springfield	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Charles	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Louis (AMSA 55)	19	19	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Louis (Hampton)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Joseph	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Louis 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weldon Spring Chemical Plant	28	28	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0
ARMY TOTALS	254	254	0	0	111	115	0	0	0	0	38	50	0	0	1	35	7	1	28
DEPARTMENT OF NAVY																			
NPRO St. Louis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Jefferson Barracks	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Lambert Field (St. Louis)	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
Richards Gebaur	7	7	0	0	0	7	0	0	1	6	0	0	2	0	1	0	0	0	0
Rosecrans Memorial Airport	4	4	0	0	0	4	0	0	0	4	0	0	0	0	0	4	0	0	4
Whiteman AFB	18	18	0	0	0	17	0	0	10	5	7	0	0	0	1	0	0	1	0
AIR FORCE TOTALS	33	31	2	0	0	28	4	0	11	15	9	0	2	0	2	4	0	1	4
MISSOURI TOTALS	288	286	2	0	112	143	4	0	11	15	47	50	2	0	3	39	7	2	32

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MONTANA																			
ARMY																			
Fort Missoula	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
NG Limestone Hills	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Billings (AMSA 5-G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bozeman	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Butte	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Great Falls	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Helena	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Helena (ECS 6)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kalispell	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**48**	**48**	**0**	**0**	**43**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
AIR FORCE																			
Great Falls ANG (Montana ANG)	8	8	0	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	0
Harve AFS, MT	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Malmstrom	21	21	0	0	0	21	0	0	8	10	0	0	2	1	0	0	1	0	0
AIR FORCE TOTALS	**30**	**30**	**0**	**0**	**0**	**22**	**8**	**0**	**8**	**11**	**8**	**0**	**2**	**2**	**8**	**0**	**1**	**1**	**0**
MONTANA TOTALS	**78**	**78**	**0**	**0**	**43**	**23**	**8**	**4**	**8**	**11**	**8**	**0**	**2**	**2**	**8**	**0**	**1**	**1**	**0**
NEBRASKA																			
ARMY																			
Cornhusker AAP	65	65	0	0	0	64	0	0	0	30	34	0	0	58	0	6	58	0	7
NG Camp Ashland	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Hasting	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lincoln Support Facility	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
NEBRASKA (Continued)																				
ARMY (Continued)																				
NG Mead	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Stanton	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Stapleton	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Columbus	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Fairbury	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fremont	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Grand Island	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hastings	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Kearney	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lincoln	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC McCook	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Meade (WET)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC North Platte	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC North Platte (AMSA 36)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Omaha (Ft. Omaha)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Omaha (Woolworth St.)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Plattsmouth	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Syracuse	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Wymore	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	**122**	**122**	**0**	**0**	**48**	**71**	**0**	**2**	**0**	**30**	**34**	**0**	**0**	**58**	**0**	**6**	**58**	**0**	**7**	
DEPARTMENT OF NAVY																				
NMCRC Omaha	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEBRASKA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NRC Lincoln	2	2	0	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
DEPARTMENT OF NAVY TOTALS	3	3	0	0	1	0	2	0	0	0	0	2	0	0	0	2	0	0	2
AIR FORCE																			
Lincoln ANG	10	10	0	0	0	9	1	0	3	0	1	6	0	0	0	6	0	0	6
Offutt AFB	21	21	0	0	0	21	0	0	1	3	18	0	0	0	3	0	0	3	0
AIR FORCE TOTALS	31	31	0	0	0	30	1	0	4	3	19	6	0	0	3	6	0	3	6
NEBRASKA TOTALS	156	156	0	0	49	101	3	2	4	33	53	8	0	58	3	14	58	3	15
NEVADA																			
ARMY																			
AFRC Las Vegas	11	11	0	0	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Hawthorne Army Ammunition Plant	78	78	0	0	0	78	0	0	0	0	1	14	0	0	0	0	0	0	0
NG Indian Springs Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Reno	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	91	91	0	0	9	80	0	2	0	0	1	14	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NAS Fallon	27	27	0	0	0	27	0	0	6	0	21	0	0	0	0	21	0	0	21
DEPARTMENT OF NAVY TOTALS	27	27	0	0	0	27	0	0	6	0	21	0	0	0	0	21	0	0	21
AIR FORCE																			
Nellis	59	59	0	0	1	59	0	0	22	9	1	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEVADA (Continued)																			
AIR FORCE (Continued)																			
Reno Cannon IAP (Nevada ANG)	12	12	0	0	0	1	11	0	0	1	11	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	71	71	0	0	1	60	11	0	22	10	12	0	9	1	0	0	0	1	0
NEVADA TOTALS	189	189	0	0	10	167	11	2	28	10	34	14	0	1	0	21	0	1	21
NEW HAMPSHIRE																			
ARMY																			
Cold Regions Research and Eng Lab	18	18	0	0	0	16	2	0	0	1	17	0	0	0	1	1	0	0	2
NG Hopington West	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Keene	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Londonderry	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Manchester	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rochester	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	40	40	0	0	21	17	2	0	0	1	17	0	0	0	1	1	0	0	2
AIR FORCE																			
New Boston AFS	14	14	0	0	0	14	0	0	7	13	0	0	5	1	0	0	1	0	0
Pease AFB	35	35	0	0	0	35	0	0	0	6	6	0	0	1	0	0	1	0	0
AIR FORCE TOTALS	49	49	0	0	0	49	0	0	7	19	6	0	5	2	0	0	2	0	0
DEFENSE LOGISTICS AGENCY																			
DESP Newington	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
NEW HAMPSHIRE TOTALS	90	90	0	0	21	67	2	0	7	21	23	0	5	2	1	2	2	0	3

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW JERSEY																			
ARMY																			
AFRC Red Bank (Monmouth)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARDEC (Picatinny Arsenal)	87	87	0	0	0	87	0	0	0	0	51	36	0	3	0	84	0	1	86
Brittin USARC	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Eradcom Flight Test Activity	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	3
Fort Dix	20	20	0	0	0	19	0	0	6	5	8	0	4	0	1	8	1	0	9
Fort Momouth	9	9	0	0	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0
Military Ocean Terminal, Bayonne	35	35	0	0	0	33	0	0	25	1	9	0	1	0	0	9	0	0	9
Pedricktown Support Facility	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Storck USARC, Northfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stryker USARC, Trenton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Caven Point	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Edison (Kilmer)	14	14	0	0	13	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARAC Edison (Weigel)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lodi	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mount Freedom	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Newark	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	212	212	0	0	49	147	0	13	31	6	68	36	5	3	1	104	1	1	107
DEPARTMENT OF NAVY																			
NAEC Lakehurst	45	45	0	0	0	45	0	0	2	0	43	0	0	0	0	30	4	0	30
NAPC Trenton	9	9	0	0	0	9	0	0	0	0	9	0	0	0	0	9	0	0	9
NWS Earle Colts Neck	29	29	0	0	0	13	16	0	2	0	11	16	0	0	0	11	0	0	11
DEPARTMENT OF NAVY TOTALS	83	83	0	0	0	67	16	0	4	0	63	16	0	0	0	50	4	0	50

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW JERSEY (Continued)																			
AIR FORCE																			
Atlantic City Apt	6	6	0	0	0	5	1	0	0	0	6	0	0	0	0	5	0	0	5
Coyle ANG Training Annex	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
McGuire AFB	23	23	0	0	0	23	0	0	0	7	0	0	1	0	0	0	0	0	0
Warren Grove	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	33	29	4	0	0	28	5	0	0	7	6	2	1	0	0	7	0	0	7
DEFENSE LOGISTICS AGENCY																			
DNSC Somerville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISITCS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW JERSEY TOTALS	329	325	4	0	49	243	21	13	35	13	137	54	6	3	1	161	5	1	164
NEW MEXICO																			
ARMY																			
Fort Wingate	18	18	0	0	0	18	0	0	0	0	0	8	0	0	0	0	0	0	0
NG Carlsbad	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Demming	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Sante Fe	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Taos	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Tucumcari	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Walker Annex	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alburquerque	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alburquerque (Jenkins)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Artesia	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Las Cruces	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Roswell	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW MEXICO (Continued)																			
ARMY (Continued)																			
USARC Santc Fe	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Silver City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White Sands Missile Range	73	73	0	0	0	73	0	0	0	0	0	7	0	0	0	0	0	0	0
ARMY TOTALS	121	121	0	0	23	97	0	1	0	0	0	15	0	0	0	0	0	0	0
AIR FORCE																			
AFP No. 83, Alburquerque	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
Cannon AFB	22	22	0	0	0	22	0	0	6	22	0	0	0	2	3	3	1	3	3
Holloman AFB	53	51	2	0	0	49	4	0	0	3	4	0	0	3	1	0	0	3	1
Kirtland AFB	55	55	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	136	134	2	0	0	132	4	0	6	25	10	0	0	5	4	3	1	6	4
NEW MEXICO TOTALS	257	255	2	0	23	229	4	1	6	25	10	15	0	5	4	3	1	6	4
NEW YORK																			
ARMY																			
AFRC Albany	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Ft. Wadsworth	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Horseheads	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Drum	70	70	0	0	0	65	3	1	0	1	3	1	0	0	0	9	0	0	9
Fort Hamilton	5	5	0	0	0	0	1	4	0	0	1	0	0	0	1	0	0	1	0
Fort Tilden	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Fort Totten	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NG Malone	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Olean	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Rochester	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
NEW YORK (Continued)																				
ARMY (Continued)																				
NG Ticonderoga	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Niagara Falls AFRC	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Nike Site 24	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Roosevelt USARC, Hempstead	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Seneca AD	32	32	0	0	0	7	25	0	0	0	2	0	0	0	0	1	0	0	1	
Stewart Army Sub Post (USMAWP)	8	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
USA Bellmore Maint. Facility	7	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	
USARC Amherst	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Amityville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC AMSA 9	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Batavia	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bronx (Patterson)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bronx (Yonkers)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bullville	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Canandaigua	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Canton	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Corning	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Elizabethtown	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Elmira	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Gerry	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Glen Falls	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Horseheads (AMSA 2G)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Ithaca	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Kingston	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
NEW YORK (Continued)																				
ARMY (Continued)																				
USARC Little Falls	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Liverpool	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Malone	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Massena	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Massena (ESC-1 Subshop A)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Medina (Shelby)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Newburgh (ASF 10)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Newburgh (Dupont)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Newburgh (Stewart Field)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Niagara Falls (AMSA 5)	25	25	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARAC Ogdensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Olean	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Orangeburg, NY	18	18	0	0	17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Oswego	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Penn Yan	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Plattsburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Poughkeepsie	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Queens	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Rocky Point	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Schenectady (AMSA 8)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Schenectady (Bradt)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Syracuse (ASF 6)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tappan	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW YORK (Continued)																			
ARMY (Continued)																			
USARC Tonawanda	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Utica	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Watertown	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wayland	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Webster (AMSA 7G)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Watervliet Arsenal	23	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0
West Point Military Academy	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Youngstown Training	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	486	486	0	0	319	114	30	22	0	1	6	1	0	0	1	10	0	1	10
DEPARTMENT OF NAVY																			
NAS Floyd Bennett Field	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIROP Rochester	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NMCRC Fort Schuyler	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS New York	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS New York Stapleton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS New York Staten Island	3	3	0	0	0	0	0	2	0	0	0	2	0	0	0	2	0	0	3
NUSC Fishers Island	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NWIRP Bethpage	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	3
NWIRP Calverton	9	9	0	0	0	2	7	0	2	0	0	7	0	0	0	7	0	0	7
DEPARTMENT OF NAVY TOTALS	21	21	0	0	5	5	8	2	2	0	3	9	0	0	0	12	0	0	13
AIR FORCE																			
AFP No. 38, Lewiston	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
AFP No. 59, Johnson City	4	4	0	0	0	4	0	0	0	2	2	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW YORK (Continued)																			
AIR FORCE (Continued)																			
Griffiss AFB	43	43	0	0	0	43	0	0	2	11	5	0	0	10	0	0	10	0	0
Hancock Field	15	15	0	0	0	14	1	0	6	9	1	0	1	0	0	0	0	0	0
Niagara Falls IAP	14	14	0	0	0	14	0	0	0	14	0	0	1	2	0	10	2	0	10
Plattsburgh AFB	25	25	0	0	0	25	0	0	3	9	8	0	0	1	0	0	0	1	0
Riverhead City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roslyn AGS	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Schenectady Airport ANG	4	4	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0
Stewart ANG	2	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	0	2
Suffolk ANG	9	9	0	0	0	9	0	0	0	3	6	0	0	0	0	0	0	0	0
Suffolk County (Former)	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Utica AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youngstown Test (RADC)	10	9	1	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	144	138	6	0	2	132	10	0	11	49	43	0	2	13	3	10	12	2	12
DEFENSE LOGISTICS AGENCY																			
DFSP Verona	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DNSC Scotia	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	1	0	0	1
NEW YORK TOTALS	653	647	6	0	326	253	48	24	13	50	54	10	2	13	4	33	12	3	36
NORTH CAROLINA																			
ARMY																			
AFRC Asheboro	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Greensboro (Rives)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NORTH CAROLINA (Continued)																			
ARMY (Continued)																			
Camp Mackall	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Bragg	26	26	0	0	0	26	0	0	0	0	26	0	0	0	0	0	0	0	0
Military Ocean Terminal, Sunny Point	14	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 17	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Tarheel Army Missile Plant	19	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Albemarle	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Asheville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brevard	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Charlotte	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Concord	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Durham	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Durham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Bragg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Garner	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Graham	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greensboro	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hickory	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC High Point	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kinston	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lumberton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Morehead City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Raleigh 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rocky Mount	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NORTH CAROLINA (Continued)																			
ARMY (Continued)																			
USARC Salisbury	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilmington	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Wilmington (AMSA 126-G)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilson	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilson, NC	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winston-Salem	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winston-Salem (King)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winston-Salem 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**156**	**156**	**0**	**0**	**91**	**64**	**0**	**1**	**0**	**0**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DEPARTMENT OF NAVY																			
MCAS Cherry Point	34	34	0	0	0	34	0	0	13	1	20	0	1	0	0	13	1	0	13
MCB Camp LeJeune	82	82	0	0	0	64	13	5	45	0	16	10	0	0	0	25	2	0	24
DEPARTMENT OF NAVY TOTALS	**116**	**116**	**0**	**0**	**0**	**98**	**13**	**5**	**58**	**1**	**36**	**10**	**1**	**0**	**0**	**38**	**3**	**0**	**37**
AIR FORCE																			
Badin AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Douglas IAP	2	2	0	0	0	1	1	0	0	0	0	2	0	0	0	2	0	0	2
Pope AFB	8	8	0	0	0	8	0	0	0	3	0	0	0	0	0	0	0	0	0
Seymour-Johnson AFB	22	22	0	0	0	22	0	0	0	21	0	0	0	0	7	6	0	3	6
AIR FORCE TOTALS	**34**	**32**	**2**	**0**	**0**	**31**	**3**	**0**	**0**	**24**	**0**	**2**	**0**	**0**	**7**	**8**	**0**	**3**	**8**
NORTH CAROLINA TOTALS	**306**	**304**	**2**	**0**	**91**	**193**	**16**	**6**	**58**	**25**	**62**	**12**	**1**	**0**	**7**	**46**	**3**	**3**	**45**

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

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		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
NORTH DAKOTA																				
ARMY																				
NG Garrison	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Williston	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stanley R. Mickelson, SFG RSL 1	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Bismarck (AMSA 23)	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fargo	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Grand Forks	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	34	34	0	0	30	2	0	2	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE																				
Grand Forks AFB	6	6	0	0	0	6	0	0	1	1	2	0	0	1	0	0	1	0	0	
Hector ANG (ND ANG)	10	10	0	0	0	6	4	0	2	0	4	0	0	0	0	0	0	0	0	
Minot AFB	8	8	0	0	0	8	0	0	1	0	3	0	0	0	0	0	0	0	0	
Watford City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	25	25	0	0	1	20	4	0	4	1	9	0	0	1	0	0	1	0	0	
DEFENSE LOGISTICS AGENCY																				
DFSP Grand Forks	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	
NORTH DAKOTA TOTALS	60	60	0	0	31	23	4	2	4	1	10	0	0	1	0	1	1	0	1	
OHIO																				
ARMY																				
NG Blue Rock	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Camp Sherman	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
OHIO (Continued)																				
ARMY (Continued)																				
NG Nike Site 78	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ravenna AAP	31	31	0	0	13	0	0	18	0	0	0	0	0	0	0	0	0	0	0	
USARC Akron (Schaffner)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Akron (Woodford)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bellaire	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bryan (AMSA 72G SUB 1)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Cadiz	8	8	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Canton 01	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Cincinnati (Morrow)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Columbus (300)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Columbus (AMSA 56)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Columbus (ASF 33)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Columbus (Whitehall)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dayton	9	9	0	0	6	0	0	3	0	0	0	0	0	0	0	0	0	0	0	
USARC Dayton (DESC)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Delaware	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Fremont, OH	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Jamestown	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Kenton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Kings Mills (AMSA 59)	11	11	0	0	7	0	0	4	0	0	0	0	0	0	0	0	0	0	0	
USARC Lima (AMSA 58 SUB 1)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Lima (Faze)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Mansfield	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
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	Total # of Sites	Number of Sites																	
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		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OHIO (Continued)																			
ARMY (Continued)																			
USARC Marietta	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marion	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Milan	13	13	0	0	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Parma (Mote)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Perrysburg (AMSA 72)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Portsmouth	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sharonville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Springfield, OH	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Toledo (Phillips)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Troy, OH	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Warren	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Warrensville Heights	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wooster	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Youngstown (Kefurt)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Zanesville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	255	255	0	0	219	3	0	33	166	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NWIRP Toledo	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
AFP No. 36, Evandale	33	33	0	0	0	20	13	0	0	0	4	0	0	0	0	0	0	0	0
AFP No. 85, Columbus	9	9	0	0	0	9	0	0	0	4	4	0	0	0	3	0	0	1	0
Blue Ash ANG	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OHIO (Continued)																				
AIR FORCE (Continued)																				
Camp Perry AGS	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Mansfield Lahm Airport ANG	8	8	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0
Newark AFS	10	10	0	0	0	10	0	0	8	0	2	0	0	0	0	0	0	0	0
Rickenbacker ANG	33	33	0	0	0	16	17	0	1	1	17	0	0	1	0	0	0	1	0
Springfield-Beckley Municipal Airport	6	6	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0
Toledo Express Airport ANG	9	9	0	0	0	0	8	0	0	0	8	1	0	0	0	1	0	0	1
Wright-Patterson AFB	63	55	8	0	0	55	8	0	5	1	57	0	0	0	3	0	0	3	0
Youngstown	5	5	0	0	0	5	0	0	1	0	2	0	0	0	0	0	0	0	0
Zanesville AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
AIR FORCE TOTALS	181	169	12	0	0	115	65	0	15	6	109	3	0	1	6	3	0	5	3
DEFENSE LOGISTICS AGENCY																				
DCSC Columbus	24	24	0	0	0	24	0	0	22	1	1	0	0	1	0	1	0	1	1
DESC Dayton	6	6	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
DFSP Cincinnati	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	31	31	0	0	0	31	0	0	29	1	1	0	0	1	0	1	0	1	1
OHIO TOTALS	468	456	12	0	220	149	65	33	44	7	110	3	0	2	6	4	0	6	4
OKLAHOMA																				
ARMY																				
AFRC Broken Arrow (AMSA 20)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Midwest City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Gruber	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Sill	47	47	0	0	0	31	16	0	0	1	0	46	0	0	1	16	0	0	17

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OKLAHOMA (Continued)																			
ARMY (Continued)																			
McAlester AAP	50	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Army Aviation Support Facility	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Combined Support Maintenance SHP	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Hugo	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Kegleman Aux Field	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 01	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 02	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 05	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 06	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 08	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 10	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 11	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 14	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 15	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Perry	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ada	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Antlers	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ardmore	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chickasha	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clinton	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Duncan	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Durant	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Enid	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Sill (ECS 65)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
OKLAHOMA (Continued)																				
ARMY (Continued)																				
USARC Guymon	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lawton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC McAlester	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Miami	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Muskogee	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Norman	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Norman 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Oklahoma City (50th Street)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Oklahoma City (Krowse)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Oklahoma City (Perez)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Okmulgee	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Ponca City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Shawnee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Stigler	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Stillwater	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tulsa (Reese)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tulsa 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	217	217	0	0	105	96	16	0	0	1	0	46	0	0	1	16	0	0	17	
AIR FORCE																				
AFP No. 3, Tulsa	14	14	0	0	0	14	0	0	0	10	2	0	0	0	0	3	0	0	3	
Altus AFB	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	10	0	0	10	
Oklahoma City ANG	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
Tinker AFB	33	33	0	0	0	33	0	0	3	21	9	0	2	16	5	0	16	5	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
OKLAHOMA (Continued)																				
AIR FORCE (Continued)																				
Tulsa IAP	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
Vance AFB	21	21	0	0	0	21	0	0	3	4	10	0	4	0	0	0	0	0	0	
Will Rogers World Airport	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	82	82	0	0	0	80	1	0	6	35	31	0	6	16	5	13	16	5	13	
OKLAHOMA TOTALS	299	299	0	0	105	176	17	0	6	36	31	46	6	16	6	29	16	5	30	
OREGON																				
ARMY																				
AFRC Coos Bay	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Roseburg	2	2	0	0	2	0	0	0	2	0	0	0	2	0	0	0	0	0	0	
AFRC Warrenton	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
NG Camp Adair	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	
NG Redmond	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	
Umatilla Army Depot Activity	116	116	0	0	0	116	0	0	40	0	76	0	0	0	0	76	0	0	76	
USARC Bend	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Corvallis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Eugene	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Medford	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Portland (Airport)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Portland (South)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Portland (West)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Salem	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	154	154	0	0	35	118	0	1	40	0	76	0	0	0	0	76	0	0	76	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OREGON (Continued)																			
AIR FORCE																			
Kingsley Field	13	13	0	0	0	13	0	0	0	1	4	0	0	1	0	0	0	1	0
North Bend ANG	9	9	0	0	0	9	0	0	3	6	0	0	0	3	0	0	0	3	0
Portland ANG	9	9	0	0	0	7	2	0	1	6	0	0	0	0	0	0	0	0	0
Richmond AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salem AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	33	33	0	0	2	29	2	0	0	13	4	0	4	4	0	0	0	4	0
OREGON TOTALS	187	187	0	0	37	147	2	1	44	13	80	0	0	4	0	76	0	4	76
PENNSYLVANIA																			
ARMY																			
AFRC Beaver Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Bellefonte	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Erie	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Folsom	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Philadelphia 06	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C.E. Kelly Support Facility	4	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
Carlisle Barracks	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Family Housing Pittsburgh 43	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort Indiantown Gap	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Hays AAP	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Letterkenny Army Depot	64	64	0	0	1	51	9	1	7	12	30	12	10	3	1	39	2	1	40
Manor Launch Site	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
NG East Jadwin Dam	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lock Haven	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
NG Nike Site 43	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site, Finleyville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site, Gastonville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Scranton Army Ammunition Plant	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
Tobyhanna AD	25	25	0	0	0	20	5	0	10	0	2	0	0	0	0	2	0	2	0
USARC Altoona	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ashley	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Belle Vernon	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bethlehem	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bloomsburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bristol	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brookville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brownsville, PA	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Butler	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Center Square	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chambersburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chester	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clarion	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clearfield	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Downingtown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Du Bois	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Edgemont	17	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Erie	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Farrell	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
USARC Franklin	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Germantown	11	11	0	0	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Gettysburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greencastle (AMSA 113)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greensburg (AMSA 104)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Harrisburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hazelton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Horsham 01	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Horsham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Huntingdon	6	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Indiana	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Johnston 01	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Johnston 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kane	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kittanning	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lancaster	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lewsiburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lewistown	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lock Haven	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marcus Hook	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Meadville	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC New Castle (AMSA 110)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD				RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F		C	U	F
PENNSYLVANIA (Continued)																				
ARMY (Continued)																				
USARC New Cumberland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC New Kensington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Norristown	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC North Park	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Northeast Philadelphia	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Oil City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Pittsburgh 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Pittsburgh 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Pittsburgh 03	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Punxsutawney (AMSA 106)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Quakertown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Ranshaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Reading	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Schuylkill Haven	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Scranton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC St. Mary's	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC State College	6	6	0	0	4	0	0	2	0	0	0	0	0	0	0	0		0	0	0
USARC Stockertown	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Tobyhanna	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Uniontown	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Washington, PA	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Wilkes-Barre	18	18	0	0	17	0	0	1	0	0	0	0	0	0	0	0		0	0	0
USARC Wilkes-Barre (AMSA 32G)	17	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0		0	0	0
USARC Williamsport	6	6	0	0	4	0	0	2	0	0	0	0	0	0	0	0		0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
USARC Willow Grove	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Willow Grove (ASF 28)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Willow Grove (Wurts)	19	19	0	0	18	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC York	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	556	556	0	0	425	89	14	26	17	12	32	12	10	3	1	41	2	3	40
DEPARTMENT OF NAVY																			
MCRC Wyoming PA	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
NADC Warminster	9	9	0	0	0	9	0	0	1	0	8	0	0	0	0	8	0	0	8
NAS Willow Grove	10	10	0	0	0	9	1	0	4	0	5	0	0	0	0	5	0	0	5
NASO Philadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVHOSP Philadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSY Philadelphia	15	15	0	0	0	15	0	0	3	0	12	0	0	0	0	12	1	0	12
SPCC Mechanicsburg	11	11	0	0	0	10	1	0	4	2	4	1	0	0	1	6	1	0	7
DEPARTMENT OF NAVY TOTALS	48	47	0	1	2	43	2	1	12	2	29	1	0	0	1	31	2	0	32
AIR FORCE																			
Fort Indiantown AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Greater Pittsburgh IAP	6	6	0	0	0	6	0	0	1	3	0	0	2	1	0	0	1	0	0
Metcoa Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Olmsted Field	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Pittsburgh, PA	5	5	0	0	0	5	0	0	4	1	0	0	0	1	0	0	1	0	0
State College	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
AIR FORCE (Continued)																			
Willow Grove ARF	7	7	0	0	0	7	0	0	3	1	3	0	2	1	0	0	1	0	0
AIR FORCE TOTALS	30	20	10	0	0	19	10	1	8	5	3	0	4	3	0	0	3	0	0
DEFENSE LOGISTICS AGENCY																			
DDRE New Cumberland	20	20	0	0	0	20	0	0	0	9	11	0	9	0	1	10	2	2	8
DPSC Philadelphia	15	15	0	0	0	15	0	0	14	0	1	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	35	35	0	0	0	35	0	0	14	9	12	0	9	0	1	11	2	2	9
PENNSYLVANIA TOTALS	669	658	10	1	427	186	26	28	51	28	76	13	23	6	3	83	9	5	81
PUERTO RICO																			
ARMY																			
Camp Santiago	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Allen	6	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Fort Buchanan	28	28	0	0	0	28	0	0	0	0	28	0	0	0	0	28	0	0	28
ARMY TOTALS	35	35	0	0	0	29	0	6	0	0	28	0	0	0	0	28	0	0	28
DEPARTMENT OF NAVY																			
NS Roosevelt Roads	21	21	0	0	0	20	1	0	2	0	15	2	1	0	0	15	3	0	16
NSGA Sabana Seca	7	7	0	0	0	6	1	0	2	0	4	0	0	0	0	4	2	0	4
Supship San Juan	3	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	31	31	0	0	0	29	2	0	7	0	19	2	1	0	0	19	5	0	20
AIR FORCE																			
Muniz ANG	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
Puerto Rico	6	6	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PUERTO RICO (Continued)																			
AIR FORCE (Continued)																			
Punta Salinas ANG	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	3
AIR FORCE TOTALS	19	19	0	0	0	13	6	0	0	0	9	0	0	0	0	3	0	0	3
PUERTO RICO TOTALS	85	85	0	0	0	71	8	6	7	0	56	2	1	0	0	50	5	0	51
RHODE ISLAND																			
ARMY																			
AFRC Providence (Hopkins)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln Support Facility	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Fogarty	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
US Army N. Smithfield Nike Site 99	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bristol, RI	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cranston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Nathaniel Greene	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lincoln (AMSA 68G)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Providence (Harwood)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Warwick	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	37	37	0	0	33	2	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
AFRC Providence	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CBC Davisville	14	14	0	0	0	14	0	0	2	0	10	2	0	0	0	12	0	3	12
NAS Charlestown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAS Quonset Point	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
RHODE ISLAND (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NETC Newport	15	15	0	0	0	15	0	0	0	0	5	10	0	0	0	15	0	1	15
DEPARTMENT OF NAVY TOTALS	32	32	0	0	3	29	0	0	2	0	15	12	0	0	0	27	0	4	27
AIR FORCE																			
Coventry AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
North Smithfield	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
Quonset State Airport ANG	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	5	1	4	0	0	0	4	0	0	0	0	2	0	0	0	2	0	0	2
DEFENSE LOGISTICS AGENCY																			
DFSP Melville	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
RHODE ISLAND TOTALS	76	72	4	0	36	33	4	0	2	0	15	16	0	0	0	31	0	4	31
SOUTH CAROLINA																			
ARMY																			
Fort Jackson	21	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Clarks Hill Reservation	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Aiken	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Anderson	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Charleston	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clemson	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbia (Forest Drive)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbia 02	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
SOUTH CAROLINA (Continued)																				
ARMY (Continued)																				
USARC Florence	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Jackson (ECS 124-G)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Jackson (Lee Rd.)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Jackson (McWhorter)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Greenville 01 (Mahon)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Greenville 02 (Kukowski)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Greenwood (Montague)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Myrtle Beach	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC North Charleston	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Orangeburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rock Hill	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Spartanburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC York, SC	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	130	130	0	0	106	22	0	2	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY																				
MCAS Beaufort	23	23	0	0	5	10	5	0	4	0	0	14	0	0	0	3	0	0	3	
MCRD Parris Island	19	19	0	0	4	5	5	0	1	0	0	9	0	0	0	4	0	0	4	
NAVBASE Charleston	12	12	0	0	0	9	0	0	0	0	12	0	0	1	0	1	5	0	1	
NWS Charleston	18	18	0	0	5	6	0	0	0	0	2	11	0	0	0	6	0	0	6	
DEPARTMENT OF NAVY TOTALS	72	72	0	0	14	30	10	0	5	0	14	34	0	1	0	14	5	0	14	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
SOUTH CAROLINA (Continued)																			
AIR FORCE																			
Charleston AFB	27	27	0	0	0	27	0	0	1	26	0	0	2	0	26	0	0	26	0
McEntire ANG	12	12	0	0	0	12	0	0	0	0	8	0	0	0	0	8	0	0	8
Myrtle Beach AFB	27	27	0	0	0	27	0	0	0	0	1	0	0	0	0	0	0	0	0
Shaw AFB	19	19	0	0	0	19	0	0	0	5	14	0	0	2	2	0	2	0	2
AIR FORCE TOTALS	85	85	0	0	0	85	0	0	1	31	23	0	2	2	28	8	2	26	10
DEFENSE LOGISTICS AGENCY																			
DFSP Charleston	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
SOUTH CAROLINA TOTALS	288	288	0	0	120	138	10	2	6	32	37	31	2	3	29	22	7	27	34
SOUTH DAKOTA																			
ARMY																			
USARC Aberdeen	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sioux Falls	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Ellsworth AFB	18	18	0	0	0	18	0	0	7	9	2	0	0	0	0	0	0	0	0
Joe Foss	10	10	0	0	0	5	5	0	4	1	5	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	28	28	0	0	0	23	5	0	11	10	7	0	0	1	0	0	0	1	0
SOUTH DAKOTA TOTALS	44	44	0	0	16	23	5	0	11	10	7	0	0	1	0	0	0	1	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TENNESSEE																			
ARMY																			
AFRC Johnson City	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holston AAP	24	24	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0
Milan Army Ammunition Plant	22	22	0	0	0	22	0	0	3	0	19	0	0	1	0	17	1	0	17
NG AEDC Tullahoma	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Catoosa Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG John Sevier	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Smyrna Airport	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chattanooga	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chattanooga (Guerry)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greeneville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Knoxville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lyell (AFRC)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Memphis 01	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Memphis 02	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Nashville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oak Ridge	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volunteer AAP	29	29	0	0	0	29	0	0	6	0	23	0	0	0	0	15	0	0	15
ARMY TOTALS	121	121	0	0	40	79	0	2	9	0	42	0	0	1	0	32	1	0	32
DEPARTMENT OF NAVY																			
NAS Memphis	13	13	0	0	4	10	2	0	0	1	9	0	0	0	0	9	0	0	9
NWIRP Bristol	9	9	0	0	9	0	5	0	0	0	0	5	0	0	2	5	0	0	7
DEPARTMENT OF NAVY TOTALS	22	22	0	0	13	10	7	0	0	1	9	5	0	0	2	14	0	0	16

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TENNESSEE (Continued)																			
AIR FORCE																			
Arnold AFB	24	24	0	0	0	24	0	0	0	0	24	0	0	1	9	0	1	2	0
Lovell Field	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
McGhee Tyson Airport	14	10	4	0	0	3	11	0	0	0	7	4	0	0	0	4	0	0	4
Memphis ANG	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nashville ANG	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	45	36	9	0	0	27	17	0	0	0	32	9	0	1	9	9	1	2	9
DEFENSE LOGISTICS AGENCY																			
DDMT Memphis	75	75	0	0	0	75	0	0	0	0	75	0	0	1	0	42	1	0	42
DEFENSE LOGISTICS AGENCY TOTALS	75	75	0	0	0	75	0	0	0	0	75	0	0	1	0	42	1	0	42
TENNESSEE TOTALS	263	254	9	0	48	191	24	2	9	1	158	14	0	3	11	97	3	2	99
TEXAS																			
ARMY																			
AFRC Austin (Camp Mabry)	15	15	0	0	12	0	0	3	0	0	0	0	0	0	0	0	0	0	0
AFRC Corpus Christi (AMSA 7)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Mesquite	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Midland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Bullis	16	16	0	0	0	0	4	11	0	0	0	0	0	0	0	0	0	0	0
Canyon Lake Recreation Area	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Corpus Christi AD	17	17	0	0	0	17	0	0	0	0	0	17	0	0	0	0	0	0	0
Corpus Christi USARC	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
El Paso Site	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TEXAS (Continued)																			
ARMY (Continued)																			
Fort Bliss	33	33	0	0	0	29	0	0	0	1	11	1	0	0	2	11	0	1	12
Fort Hood	52	52	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Sam Houston	28	28	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuels and Lubricant Research Lab	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Lake Lavon, North Gully, Wylie	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Lone Star AAP	43	43	0	0	0	42	0	0	8	0	37	0	0	4	0	21	3	1	21
Longhorn AAP	59	59	0	0	0	16	0	10	0	0	12	47	0	0	0	0	1	0	0
NG Addicks Reservoir	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Parker Dam DZ	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Barkeley	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Swift	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Decatur	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Fort Wolters	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site 80	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Panhandle Training Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Reservoir Texarcana	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG West Cleveland	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Red River Army Depot	32	32	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Saginaw Army Aircraft Plant	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USA Houston Armed Forces Center	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Abilene	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alice	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Amarillo	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
TEXAS (Continued)																				
ARMY (Continued)																				
USARC Amarillo 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Arlington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Austin (Camp Mabry)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Austin 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Austin 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bay City, TX	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Beaumont (AMSA 6)	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Beaumont (Laurel)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Brownsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bryan (Moore)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bryan 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Conroe (ASF 62)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Corpus Christi (Memorial)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dallas 01 (Muchert)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dallas 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Dallas 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Denton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC El Paso	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Bliss (AMSA 12)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Bliss (Biggs Field Pet)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Worth (HOT)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Worth 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Worth (AMSA 5, SUB 2)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
TEXAS (Continued)																				
ARMY (Continued)																				
USARC Grand Prairie (ASF 13)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Harlingen (AMSA 7, SUB 1)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Houston 02 (AMSA 4)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Huntsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Laredo	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lubbock	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lubbock (AMSA 11)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lubbock (Hospital TNG)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC McAllen	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC North Fort Hood (ESC 64)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Paris	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Pasadena	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Port Arthur	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rio Grande City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Antonio (Boswell)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Antonio (Callaghan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Marcos	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Seagoville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sinton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Texarkana (AMSA 5 SUB 4)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tyler	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
TEXAS (Continued)																				
ARMY (Continued)																				
USARC Victoria	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Waco	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Waco (AMSA 8)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Wichita Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Wichita Falls 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Yoakum	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	577	577	0	0	275	226	5	33	8	1	60	65	0	4	2	32	4	2	33	
DEPARTMENT OF NAVY																				
NAS Chase Field	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	1	0	0	1	
NAS Corpus Christi	15	15	0	0	0	15	0	0	12	0	3	0	0	0	0	1	0	1	1	
NAS Dallas	12	12	0	0	4	5	0	0	0	0	0	8	0	0	0	6	0	0	6	
NAS Kingsville	13	13	0	0	0	6	7	0	6	0	0	7	0	0	0	2	0	0	2	
NWIRP Dallas	11	11	0	0	2	9	0	0	2	0	0	7	0	0	0	5	0	0	6	
NWIRP McGregor	14	14	0	0	4	8	0	0	5	0	4	0	0	0	0	3	1	0	3	
DEPARTMENT OF NAVY TOTALS	69	69	0	0	10	43	11	0	25	0	7	26	0	0	0	18	1	1	19	
AIR FORCE																				
AFP No. 4, Ft. Worth	30	30	0	0	0	26	0	0	7	6	12	0	0	2	20	0	0	22	0	
Bergstrom AFB	27	27	0	0	0	27	0	0	15	1	11	0	0	0	0	0	0	0	0	
Brooks AFB	11	11	0	0	0	11	0	0	0	10	1	0	0	0	0	0	0	0	0	
Carswell AFB	18	18	0	0	0	18	0	0	5	3	5	0	1	1	2	0	0	0	2	
Dyess AFB	39	39	0	0	0	39	0	0	5	5	1	0	0	2	3	0	0	3	2	
Ellington ANG	6	6	0	0	0	6	0	0	0	4	1	0	0	0	2	0	0	2	0	
Garland	5	1	4	0	0	1	4	0	0	1	0	0	0	1	0	0	0	1	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
TEXAS (Continued)																				
AIR FORCE (Continued)																				
Goodfellow AFB	6	6	0	0	0	6	0	0	2	2	0	0	2	1	0	0	0	0	0	
Kelly AFB	48	48	0	0	0	48	0	0	4	19	6	0	0	1	3	0	1	3	0	
Lackland	24	24	0	0	0	24	0	0	4	14	5	0	12	1	1	5	1	0	5	
LaPorte AGS	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	
Laughlin	13	13	0	0	0	13	0	0	6	7	0	0	6	0	0	0	0	0	0	
Nederland AGS	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	
Randolph AFB	20	20	0	0	0	20	0	0	5	1	1	0	5	0	0	0	0	0	0	
Reese AFB	13	13	0	0	0	13	0	0	4	2	3	0	2	0	2	0	0	2	0	
Sheppard AFB	19	19	0	0	0	19	0	0	6	8	0	0	6	2	0	0	0	2	0	
AIR FORCE TOTALS	289	275	14	0	0	271	14	0	63	83	56	0	34	11	33	5	2	35	9	
TEXAS TOTALS	935	921	14	0	285	540	30	33	96	84	123	91	34	15	35	55	7	38	61	
TRUST TERRITORIES																				
DEPARTMENT OF NAVY																				
NAF Midway	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	3	
DEPARTMENT OF NAVY TOTALS	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	3	
AIR FORCE																				
Wake Island Airfield	23	23	0	0	0	23	0	0	0	0	23	0	0	0	0	23	0	0	23	
AIR FORCE TOTALS	23	23	0	0	0	23	0	0	0	0	23	0	0	0	0	23	0	0	23	
TRUST TERRITORIES TOTALS	26	26	0	0	0	23	3	0	0	0	23	3	0	0	0	26	0	0	26	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
UTAH																			
ARMY																			
Blanding Launch Area	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Dugway Proving Ground	167	167	0	0	0	1	0	162	0	4	0	162	7	0	0	162	0	0	162
Fort Douglas	23	23	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0
Green River Test Site	12	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
Tooele AD, North Area	45	45	0	0	0	45	0	0	8	1	36	0	0	1	0	36	0	1	36
Tooele AD, South Area	28	28	0	0	0	28	0	0	0	0	28	0	0	0	0	28	1	0	27
USARC Logan	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ogden	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ogden (AMSA 31)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ogden Depot	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pleasant Grove	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Provo	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salt Lake City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salt Lake City (ASF 24)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wig Mountain Area	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	343	343	0	0	61	93	0	185	8	5	64	162	7	1	0	226	1	1	225
DEPARTMENT OF NAVY																			
NIROP Magna	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
AIR FORCE																			
AFP No. 78, Corinne	12	12	0	0	0	12	0	0	0	0	12	0	0	0	4	0	0	4	0
Francis Peak AGS	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Hill AFB	45	45	0	0	1	45	0	0	3	7	4	0	2	0	4	0	0	4	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
UTAH (Continued)																				
AIR FORCE (Continued)																				
Salt Lake City IAP ANG (Utah ARNG)	7	7	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	65	64	0	1	1	57	7	1	3	7	23	0	2	0	8	0	0	8	0	
DEFENSE LOGISTICS AGENCY																				
DDOU Ogden	44	44	0	0	0	44	0	0	32	22	0	0	12	4	3	3	1	2	7	
DEFENSE LOGISTICS AGENCY TOTALS	44	44	0	0	0	44	0	0	22	22	0	0	12	4	3	3	1	2	7	
UTAH TOTALS	458	457	0	1	62	200	7	186	33	34	93	162	21	5	11	229	2	11	232	
VERMONT																				
ARMY																				
Ethan Allen Firing Range	6	6	0	0	5	1	1	3	1	0	0	0	0	0	0	0	0	0	0	
USARC Chester, VT	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Montpelier	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rutland (Courcelle)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Winooski	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	23	23	0	0	22	1	1	3	1	0	0	0	0	0	0	0	0	0	0	
AIR FORCE																				
Burlington IAP (Vermont ANG)	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	
AIR FORCE TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	
VERMONT TOTALS	25	25	0	0	22	3	1	3	1	0	2	0	0	0	0	0	0	0	0	

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
VIRGIN ISLANDS																			
AIR FORCE																			
St. Croix	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
VIRGIN ISLANDS TOTALS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
VIRGINIA																			
ARMY																			
AFRC Lynchburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington Hall Station	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Cameron Station	6	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Defense Mapping Agency Herndon	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Fort A.P. Hill	245	245	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	0	0
Fort Belvoir	59	59	0	0	0	17	0	34	0	0	0	0	0	0	0	0	0	0	0
Fort Eustis	26	26	0	0	0	26	0	0	0	26	0	0	0	0	26	0	0	26	0
Fort Lee	22	22	0	0	0	6	1	15	0	1	0	0	0	2	0	0	1	0	0
Fort Monroe	3	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
Fort Myer	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Fort Story	3	3	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0
NG Byrd Field	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Callaghan	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Richlands	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG VA Beach	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Radford AAP	37	37	0	0	0	37	0	0	0	0	37	0	0	0	0	37	0	0	37
USARC Abingdon	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alexandria	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
VIRGINIA (Continued)																				
ARMY (Continued)																				
USARC Alexandria (Jones Point)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Charlottesville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chesterfield (AMSA 90)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chincoteague (Wallops Is.)	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Christiansburg (AMSA 89)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Churchland (Portsmouth)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Covington	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Culpeper	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Galax	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hampton	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hampton (Marcella Road)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lawrenceville	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Martinsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Norfolk	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Radford	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Radford (New River)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Richmond (Dervishian)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Richmond 01 (Monteith)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Richmond, VA	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Salem, VA	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Springfield (AMSA 91)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Continued)

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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
VIRGINIA (Continued)																			
ARMY (Continued)																			
USARC Warsaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Waynesboro	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vint Hill Farms Station	4	4	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0
Woodbridge Research Facility	13	13	0	0	4	9	0	0	8	1	0	0	0	1	0	0	1	0	0
ARMY TOTALS	545	545	0	0	114	104	3	316	8	30	37	0	0	3	26	37	2	26	37
DEPARTMENT OF NAVY																			
AFEXTA Camp Peary, Williamsburg	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington Service Center	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMNAVBASE Norfolk	18	18	0	0	0	18	0	0	12	0	6	0	0	0	0	6	0	2	6
FCTC Dam Neck	6	6	0	0	0	6	0	0	4	0	2	0	0	0	0	2	0	0	2
Headquarters Battalion, Arlington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
MCCDC Quantico	20	20	0	0	0	19	1	0	11	1	7	0	0	1	2	8	3	0	10
NADEP Norfolk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
NAS Oceana	19	19	0	0	0	19	0	0	5	1	13	0	1	0	0	6	0	0	6
NAVHOSP Portsmouth	2	2	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0
NAVPHIBASE Little Creek	17	17	0	0	0	12	5	0	6	0	6	5	0	0	0	11	0	0	11
NAVRADSTA Driver	8	8	0	0	0	8	0	0	5	0	3	0	0	0	0	3	0	0	3
NFD/NSC Craney Island	14	14	0	0	0	13	0	0	7	3	4	0	0	0	1	6	0	0	6
NMCRC Roanoke	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSC Cheatham Annex Williamsburg	12	12	0	0	0	12	0	0	8	1	3	0	1	0	0	3	0	0	3
NSC Yorktown Fuels Division	20	20	0	0	0	20	0	0	6	0	14	0	0	0	0	14	0	0	14
NSGA Northwest Chesapeake	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSWC Dahlgren	37	37	0	0	0	34	3	0	28	0	9	0	0	0	0	10	0	2	10

(Continued)

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State-by-State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
VIRGINIA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NSY (Norfolk) Portsmouth	19	19	0	0	0	19	0	0	11	1	7	0	1	0	0	7	0	0	7
NWS St. Julien's Creek Annex, Norfolk	2	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NWS Yorktown	21	21	0	0	0	20	1	0	4	1	15	1	1	0	0	16	0	0	16
DEPARTMENT OF NAVY TOTALS	220	220	0	0	6	201	11	0	197	8	89	8	4	3	3	92	5	5	94
AIR FORCE																			
Byrd ANG (Richmond IAP)	3	3	0	0	0	0	0	3	0	0	0	3	0	0	0	3	0	0	3
CONUS Radar Sites	37	37	0	0	17	37	0	0	0	37	0	0	0	5	0	18	1	4	18
Langley AFB	36	36	0	0	0	36	0	0	14	10	0	0	0	1	7	0	1	7	0
Richmond ANG	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	78	78	0	0	17	73	2	3	14	47	2	3	0	6	7	21	2	11	21
DEFENSE LOGISTICS AGENCY																			
DGSC Richmond	30	30	0	0	0	30	0	0	18	3	9	0	1	0	0	5	4	0	3
DEFENSE LOGISTICS AGENCY TOTALS	30	30	0	0	0	30	0	0	18	3	9	0	1	0	0	5	4	0	3
VIRGINIA TOTALS	873	873	0	0	137	408	17	319	147	85	137	11	5	10	36	155	13	42	155
WASHINGTON																			
ARMY																			
AFRC Bellingham	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0
AFRC Bellingham (Stevens)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Ellensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Fort Orchard	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Tacoma	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WASHINGTON (Continued)																			
ARMY (Continued)																			
AFRC Yakima	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Regional Center Bothell	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort Lewis	46	46	0	0	28	8	0	9	0	5	2	1	0	0	5	2	3	0	6
NG Camp Murray	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
NG Camp Seven Mile	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 43	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bothell	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clarkston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Everett	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Lawton (AMSA 7)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kennewick	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Longview	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Moses Lake	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pasco	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Redmond	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Spokane	12	12	0	0	9	0	0	3	0	0	0	3	0	0	0	0	0	0	0
USARC Trentwood (AMSA 5)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tumwater	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Walla Walla	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wenatchee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Yakima (Pendleton)	4	4	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
Vancouver Barracks	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Yakima Firing Center	37	37	0	0	0	37	0	0	0	0	0	37	0	0	0	0	0	0	0
ARMY TOTALS	**182**	**182**	**0**	**0**	**114**	**49**	**0**	**18**	**0**	**6**	**2**	**39**	**0**	**0**	**6**	**2**	**3**	**1**	**6**

(Continued)

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State by State Installation Status Listing As of September 30, 1991

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		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
WASHINGTON (Continued)																				
DEPARTMENT OF NAVY																				
Jackson Park Housing, Bremerton	4	3	1	0	0	3	1	0	0	0	2	1	0	0	0	2	0	0	3	
NAS Whidbey Island	51	51	0	0	0	51	0	0	12	0	31	8	0	0	0	39	0	0	39	
NAVHOSP Bremerton	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	
NAVRADSTA/T/Jim Creek	8	8	0	0	0	6	2	0	6	0	0	0	0	0	0	0	0	0	0	
NAVRESMAINTRAFAC Puget Sound	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	
NS Puget Sound	2	1	1	0	0	1	0	0	0	0	1	1	0	0	0	2	0	0	0	
NSB Bangor	43	42	0	0	0	42	0	0	15	4	23	0	4	0	0	24	1	0	24	
NSC Puget Sound Bremerton	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	
NSC Puget Sound Manchester	2	2	0	0	0	2	0	0	1	1	0	0	0	0	1	0	0	1	0	
NSY Everett	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
NSY Puget Sound	22	22	0	0	0	8	10	0	8	0	8	2	0	0	6	1	0	0	8	
NUWES Indian Island Det.	13	13	0	0	0	0	10	0	7	1	2	0	0	1	0	2	2	0	6	
NUWES Keyport	10	10	0	0	0	8	1	0	3	0	7	1	0	0	0	6	0	0	6	
DEPARTMENT OF NAVY TOTALS	158	156	2	0	0	123	24	2	53	5	75	14	4	1	7	75	3	1	85	
AIR FORCE																				
Bellingham MAP	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
Camp Murray AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2	
Fairchild AFB	30	30	0	0	0	30	0	0	0	2	12	0	0	1	0	0	0	1	0	
Four Lakes	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
Makah AFS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	
McChord AFB	64	64	0	0	0	64	0	0	1	1	0	0	0	0	0	0	0	0	0	
Paine Field AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2	
Seattle AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2	

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
WASHINGTON (Continued)																				
AIR FORCE (Continued)																				
Spokane IAP	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
AIR FORCE TOTALS	106	97	9	0	0	97	9	0	1	4	14	6	0	1	0	8	0	1	8	
DEFENSE LOGISTICS AGENCY																				
DFSP Mukilteo	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2	
WASHINGTON TOTALS	448	437	11	0	114	271	33	20	54	16	93	59	4	2	13	90	6	3	104	
WEST VIRGINIA																				
ARMY																				
AFRC Morgantown	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC South Charleston	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC South Charleston (AMSA 107)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Huntington	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NG Volcano Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Beaver	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Bluefield	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Clarksburg	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC East Kanawha	4	4	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
USARC Hinton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fairmont	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Grafton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Grantsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Huntington	3	3	0	0	2	0	0	1	0	3	0	0	0	0	0	0	0	0	0	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
WEST VIRGINIA (Continued)																				
ARMY (Continued)																				
USARC Jane Lew	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lewisburg, WV	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Martinsburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC New Martinsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Parkersburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Parkersburg (AMSA 114)	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Ripley	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Romney	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Valley Grove (AMSA 109)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Weirton	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
USARC Wheeling	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
West Virginia Ordnance Works	6	6	0	0	0	6	0	0	0	6	0	0	0	3	3	0	3	3	0	
ARMY TOTALS	95	95	0	0	80	8	0	7	0	6	0	0	0	3	3	0	3	3	0	
DEPARTMENT OF NAVY																				
ABL Mineral County	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	6	0	0	6	
NAVRADSTA/R/ Sugar Grove	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	11	11	0	0	1	10	0	0	0	0	10	0	0	0	0	6	0	0	6	

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WEST VIRGINIA (Continued)																			
AIR FORCE																			
EWVRA Shepherd Field	4	4	0	0	0	4	0	0	0	3	1	0	0	3	0	0	0	0	0
Yeager	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	8	8	0	0	0	8	0	0	0	3	1	0	0	3	0	0	0	0	0
WEST VIRGINIA TOTALS	114	114	0	0	81	26	0	7	0	9	11	0	0	6	3	6	3	3	6
WISCONSIN																			
ARMY																			
Badger Army Ammunition Plant	28	28	0	0	15	12	0	0	1	0	12	0	0	1	0	7	0	1	7
Camp Williams	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Wismer	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort McCoy	26	26	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0
NG INO Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Truax Field	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Appleton	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beaver Dam	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beloit	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chippewa Falls	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC De Pere (AMSA 51)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dodgeville	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Eau Claire (AMSA 52)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Eau Claire (Keith)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ellsworth	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fond du Lac	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Green Bay	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WISCONSIN (Continued)																			
ARMY (Continued)																			
USARC Green Bay (Buchanan Street)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hurley (AMSA 52 SUB 1)	8	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ladysmith	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Madison (AMSA 50)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Madison (O'Connell)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Madison (Park St.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Manitowoc	8	8	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Menasha	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Milwaukee (AMSA 49)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Milwaukee (Logan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Milwaukee (Silver Spring)	16	16	0	0	14	0	0	2	0	0	1	0	0	0	1	0	0	1	0
USARC Onalaska (AMSA 53)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Onalaska (Industrial Road)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oshkosh	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pewaukee	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Racine	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sheboygan	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sparta (Fort McCoy 240)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sparta (Ft. McCoy ECS 67)	14	14	0	0	9	0	0	5	0	0	0	0	0	0	0	0	0	0	0
USARC Wausau	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**236**	**236**	**0**	**0**	**170**	**42**	**0**	**17**	**1**	**0**	**13**	**0**	**0**	**1**	**1**	**7**	**0**	**2**	**7**

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WISCONSIN (Continued)																			
AIR FORCE																			
Gen. Mitchell Field	4	4	0	0	0	4	0	0	3	1	0	0	0	1	0	0	1	0	0
Hardwood WR	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Truax Field (Air Force)	7	5	2	0	0	5	2	0	2	0	4	2	1	0	0	2	0	0	2
Volk Field ANG	17	17	0	0	0	10	7	0	1	9	7	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	29	26	2	1	0	19	9	1	6	10	11	2	1	1	0	2	1	0	2
WISCONSIN TOTALS	265	262	2	1	170	61	9	18	7	10	24	2	1	2	1	9	1	2	9
WYOMING																			
ARMY																			
AFRC Sheridan	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lander	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lovell	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Sheridan	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cheyenne	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	10	10	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Cheyenne ANG (Wyoming ANG)	5	5	0	0	0	5	0	0	0	1	4	0	0	1	4	0	0	1	4
F.E. Warren AFB	20	20	0	0	0	20	0	0	0	7	12	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	25	25	0	0	0	25	0	0	0	8	16	0	0	1	4	0	0	1	4
WYOMING TOTALS	35	35	0	0	7	28	0	0	0	8	16	0	0	1	4	0	0	1	4

Table C-2
Department of Defense Environmental Restoration Program
IRP Status Summary, As of September 30, 1991

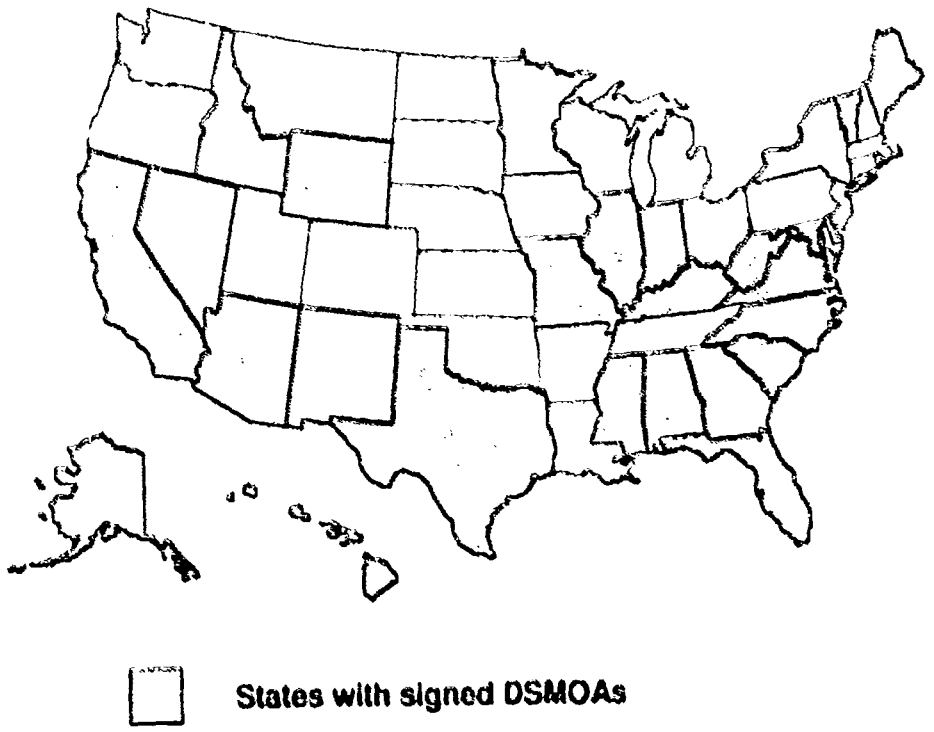
Component	Number of Sites			
	C	U	F	CO
PA				
Army	10,567	6	5	4,763
Navy	2,362	43	4	200
Air Force	4,038	301	15	75
DLA	319	0	0	0
Grand Total	**17,286**	**350**	**24**	**5,038**
SI				
Army	4,330	192	1,050	242
Navy	1,580	477	68	506
Air Force	3,821	472	10	526
DLA	319	0	0	104
Grand Total	**10,050**	**1,141**	**1,128**	**1,378**
RI/FS				
Army	355	955	886	49
Navy	38	971	529	10
Air Force	1,053	1,313	69	165
DLA	47	163	4	23
Grand Total	**1,493**	**3,402**	**1,488**	**247**
RD				
Army	141	234	1,075	0
Navy	9	27	1,286	0
Air Force	230	475	387	0
DLA	12	9	129	0
Grand Total	**392**	**745**	**2,877**	**0**
RA				
Army	146	237	1,079	0
Navy	60	38	1,330	5
Air Force	150	415	404	68
DLA	16	8	129	0
Grand Total	**372**	**698**	**2,942**	**73**

Appendix D
State Status

This Appendix to the Annual Report provides state-by-state information regarding NPL, DSMOA, and IAG status. For the states, the following information is given:

- Number of installations and sites in the IRP
- IRP site status
- DSMOA and CA status
- Number of NPL-listed DoD installations
- Number of NPL installations covered by a signed IAG
- Number of installations covered by a DSMOA (for states with a signed DSMOA)
- FY 1991 funding provided to the state under the DSMOA.

The installations included in the following total state counts are listed in Table C-1.



States with signed DSMOAs

Table D-1

Department of Defense Environmental Restoration Program
Installation Restoration Program Status Summary, As of September 30, 1991

	Total # of Installations	Total # of Sites	PA			
			C	U	F	CO
Alabama	45	561	546	15	0	192
Alaska	52	648	624	24	0	2
Arizona	21	327	314	2	11	28
Arkansas	33	282	281	0	1	116
California	148	2,064	1,933	128	3	214
Colorado	22	400	396	4	0	42
Connecticut	23	102	102	0	0	63
Delaware	10	86	86	0	0	19
District of Columbia	7	23	23	0	0	2
Florida	63	540	501	39	0	141
Georgia	37	484	465	19	0	86
Guam	9	102	102	0	0	28
Hawaii	46	230	224	6	0	55
Idaho	20	90	90	0	0	42
Illinois	59	567	566	0	1	263
Indiana	30	345	345	0	0	119
Iowa	28	186	186	0	0	120
Kansas	40	318	318	0	0	121
Kentucky	30	427	427	0	0	85
Louisiana	33	202	197	5	0	106
Maine	18	122	117	5	0	34
Maryland	56	532	521	6	5	115
Massachusetts	27	365	349	16	0	68
Michigan	35	242	240	2	0	95
Minnesota	30	225	224	1	0	152
Mississippi	29	224	224	0	0	88
Missouri	37	288	286	2	0	112

C = Completed Activity • U = Underway Activity • F = Future Activity Planned • CO = Closed-Out Sites

Number of Sites													
SI				RI/FS				RD			RA		
C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
299	32	5	69	58	101	62	0	23	21	142	20	17	148
551	63	32	74	167	217	39	43	32	111	170	26	75	170
286	7	1	31	33	35	1	1	9	5	17	3	9	19
155	0	1	1	53	7	0	0	29	0	0	23	0	0
1,485	283	74	196	163	618	280	24	41	181	531	45	188	550
355	4	0	16	211	43	2	10	24	162	10	13	160	12
26	6	9	0	0	15	6	0	0	0	17	1	0	17
64	0	3	26	3	29	0	0	1	0	0	0	1	0
14	3	4	0	2	5	2	0	2	0	0	1	2	1
250	95	8	25	22	181	35	0	9	3	113	11	4	114
281	16	15	11	18	30	34	0	9	4	39	7	4	39
74	0	0	25	7	22	4	0	1	2	16	2	2	17
143	28	0	16	20	38	34	0	8	1	56	7	2	55
52	0	0	3	4	17	0	0	2	2	4	2	0	4
268	17	17	48	33	101	14	13	4	10	66	6	10	69
170	41	8	3	2	23	34	0	1	0	37	2	0	36
56	4	6	0	4	47	0	0	1	6	30	1	5	30
194	0	3	10	7	22	53	2	3	4	0	6	5	0
226	38	78	3	0	2	38	0	0	1	37	0	2	37
102	9	1	27	3	15	14	0	1	1	21	1	0	22
77	10	1	8	4	40	4	3	3	0	29	2	1	29
370	26	10	53	44	54	77	22	5	24	39	6	20	43
169	50	77	6	26	112	105	6	14	8	163	13	3	161
139	2	6	14	3	36	22	4	2	1	26	2	1	26
60	3	9	7	3	34	0	0	4	9	13	5	11	13
66	22	48	12	23	28	9	4	3	0	19	5	2	16
143	4	0	11	15	47	50	2	0	3	39	7	2	32

(Continued)

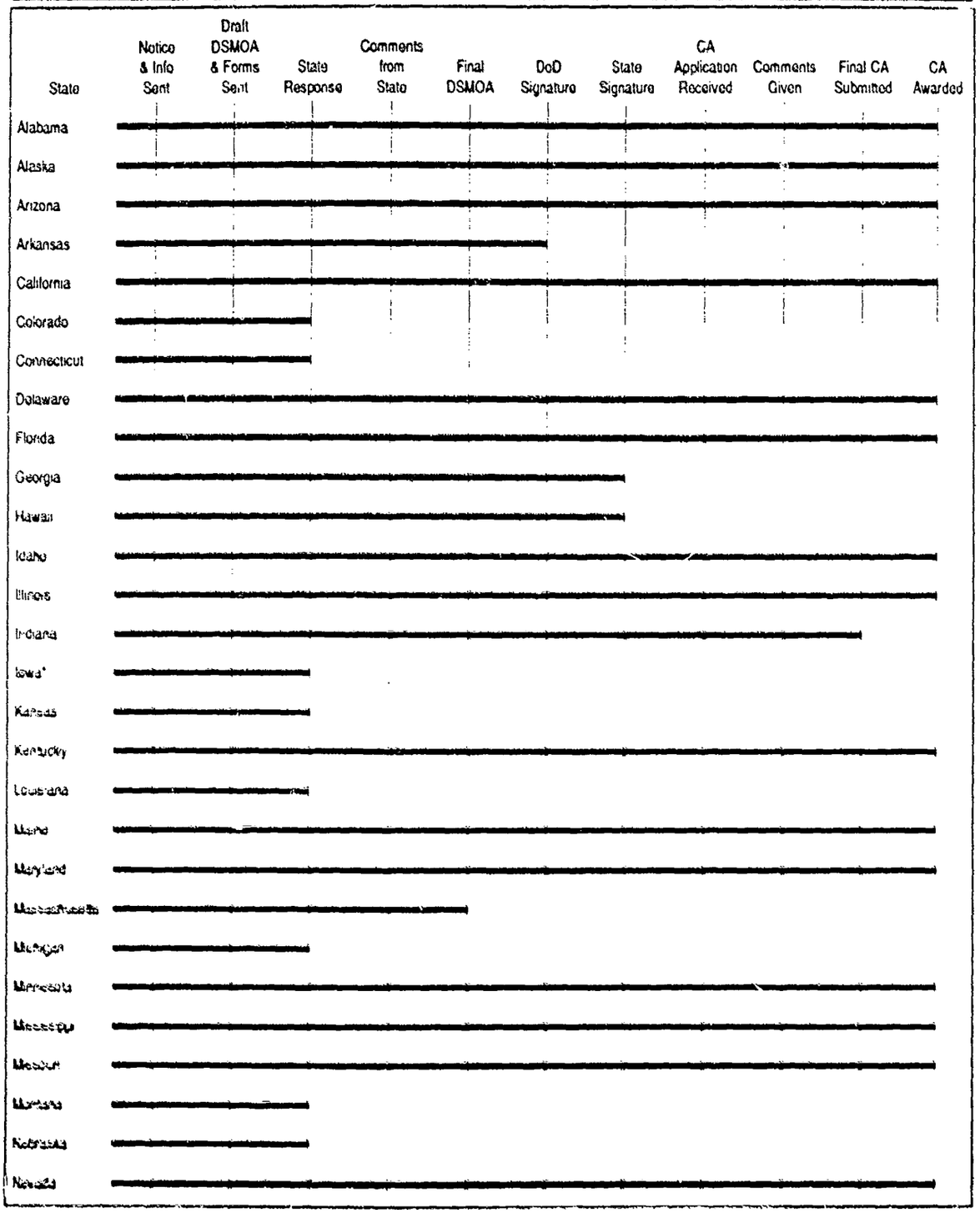
Table D-1
Department of Defense Environmental Restoration Program
Installation Restoration Program Status Summary, As of September 30, 1991

	Total # of Installations	Total # of Sites	PA			
			C	U	F	CO
Montana	12	78	78	0	0	43
Nebraska	27	156	156	0	0	49
Nevada	7	189	189	0	0	10
New Hampshire	9	90	90	0	0	21
New Jersey	24	329	325	4	0	49
New Mexico	19	257	255	2	0	23
New York	90	653	647	6	0	326
North Carolina	40	306	304	2	0	91
North Dakota	11	60	60	0	0	31
Ohio	56	468	456	12	0	220
Oklahoma	52	299	299	0	0	105
Oregon	19	187	187	0	0	37
Pennsylvania	105	669	658	10	1	427
Puerto Rico	9	85	85	0	0	0
Rhode Island	19	76	72	4	0	36
South Carolina	30	288	288	0	0	120
South Dakota	4	44	44	0	0	16
Tennessee	25	263	254	9	0	48
Texas	104	935	921	14	0	285
Trust Territories	2	26	26	0	0	0
Utah	21	458	457	0	1	62
Vermont	6	25	25	0	0	22
Virgin Islands	1	2	2	0	0	0
Virginia	68	873	873	0	0	137
Washington	51	448	437	11	0	114
West Virginia	30	114	114	0	0	81
Wisconsin	41	265	262	2	1	170
Wyoming	7	35	35	0	0	7
Grand Totals	**1,877**	**17,660**	**17,286**	**350**	**24**	**5,038**

Number of Sites													
SI				RI/FS				RD			RA		
C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
23	8	4	8	11	8	0	2	2	8	0	1	1	0
101	3	2	4	33	53	8	0	58	3	14	58	3	15
167	11	2	28	10	34	14	0	1	0	21	0	1	21
67	2	0	7	21	23	0	5	2	1	2	2	0	3
243	21	13	35	13	137	54	6	3	1	161	5	1	164
229	4	1	6	25	10	15	0	5	4	3	1	6	4
253	48	24	13	50	54	10	2	13	4	33	12	3	36
193	16	6	58	25	62	12	1	0	7	46	3	3	45
23	4	2	4	1	10	0	0	1	0	1	1	0	1
149	65	33	44	7	110	3	0	2	6	4	0	6	4
176	17	0	6	36	31	46	6	16	6	29	16	5	30
147	2	1	44	13	80	0	0	4	0	76	0	4	76
186	26	28	51	28	76	13	23	6	3	83	9	5	81
71	8	6	7	0	56	2	1	0	0	50	5	0	51
33	4	0	2	0	15	16	0	0	0	31	0	4	31
138	10	2	6	32	37	34	2	3	29	22	7	27	24
23	5	0	11	10	7	0	0	1	0	0	0	1	0
191	24	2	9	1	158	14	0	3	11	97	3	2	99
546	30	33	96	84	123	91	34	15	35	55	7	38	61
23	3	0	0	0	23	3	0	0	0	26	0	0	26
200	7	186	33	34	93	162	21	5	11	229	2	11	232
3	1	3	1	0	2	0	0	0	0	0	0	0	0
2	0	0	2	0	0	0	0	0	0	0	0	0	0
408	17	319	147	88	137	11	5	10	36	155	13	42	155
271	33	20	54	16	93	59	4	2	13	90	6	3	104
26	0	7	0	9	11	0	0	6	3	6	3	3	6
61	9	18	7	10	24	2	1	2	1	9	1	2	9
28	0	0	0	8	16	0	0	1	4	0	0	1	4
10,050	1,141	1,128	1,378	1,493	3,402	1,488	247	392	745	2,877	372	698	2,947

Table D-2

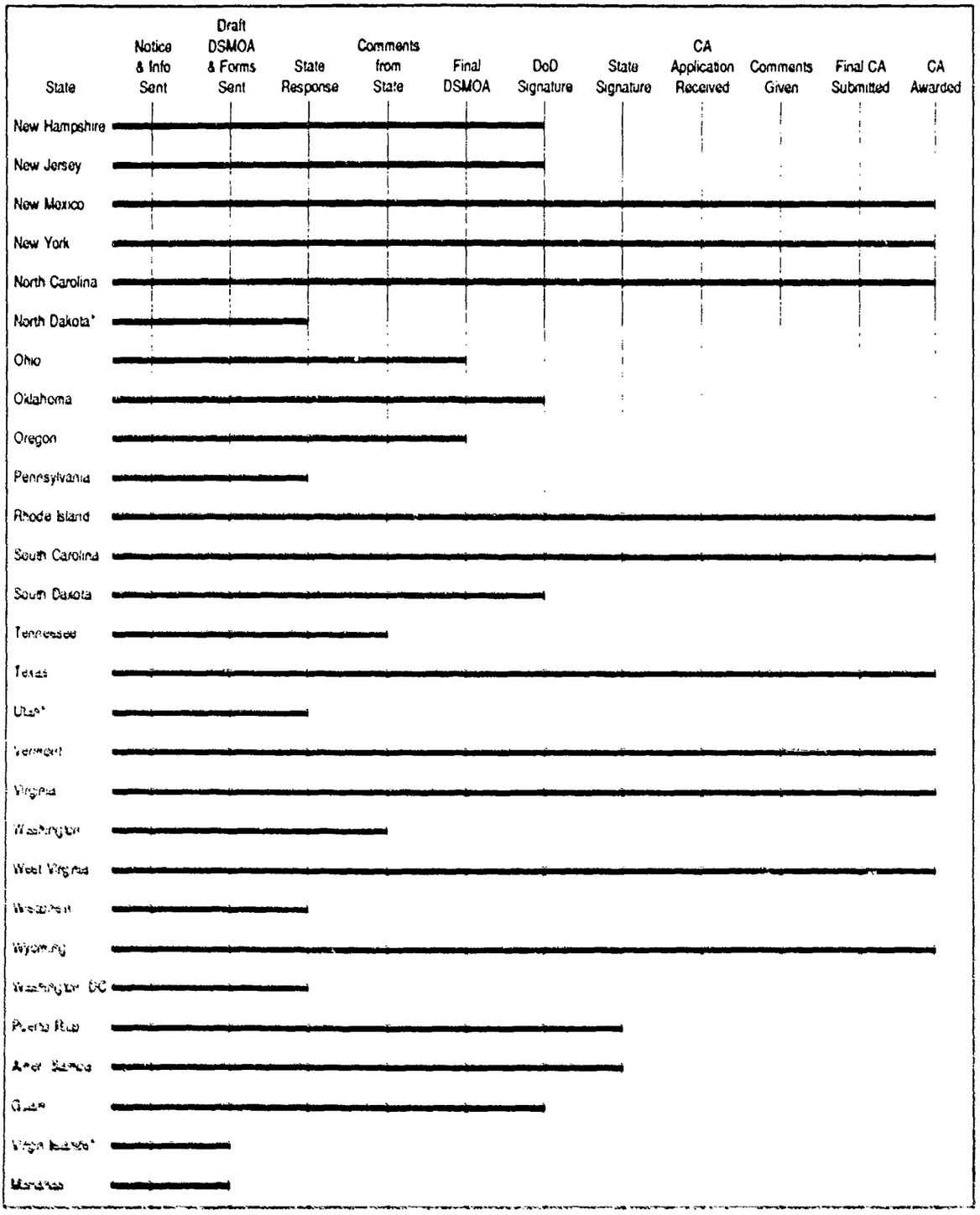
Defense and State Memorandum of Agreement and Cooperative Agreement Status as of September 30, 1991



*State has not pursued DSMOA.
CA = Cooperative Agreement

Table D-2

Defense and State Memorandum of Agreement and Cooperative Agreement Status as of September 30, 1991



*State has not pursued DSMOA
CA - Cooperative Agreement

Table D-3
Installation Restoration Program, National Priorities List, and Defense and State Memoranda of Agreement Status by State

State	IRP Installations	NPL Installations		DSMOA Status	
		Total	Covered by a Signed IAG	Installations covered by a DSMOA	$(K) during FY 1991
Alabama	45	2	2	10	274
Alaska	52	3	1	75	465
Arizona	21	3	2	13	624
Arkansas	33	0	0	—	—
California	148	18	18	79	6,389
Colorado	22	2	1	—	—
Connecticut	23	1	0	—	—
Delaware	10	1	1	2	—
District of Columbia	7	0	0	—	—
Florida	63	4	4	15	—
Georgia	37	2	2	13	—
Guam	9	0	0	—	—
Hawaii	46	2 *	1	26	—
Idaho	20	1	0	2	199
Illinois	59	2	2	14	100
Indiana	30	0	0	8	—
Iowa	28	1	1	—	—
Kansas	40	1	1	—	—
Kentucky	30	0	0	6	379
Louisiana	33	1	1	—	—
Maine	18	2	2	5	645
Maryland	56	1	1	14	1,665
Massachusetts	27	3	3	—	—
Michigan	35	0	0	—	—
Minnesota	30	3	3	4	827
Mississippi	29	0	0	10	35
Missouri	37	2	2	8	650
Montana	12	0	0	—	—

* Includes Pearl Harbor Naval Complex proposed for 3rd NPL

Table D-3
Installation Restoration Program, National Priorities List, and Defense and State Memoranda of Agreement Status by State

State	IRP Installations	NPL Installations		DSMOA Status	
		Total	Covered by a Signed IAG	Installations covered by a DSMOA	$(K) during FY 1991
Nebraska	27	1	1	—	—
Nevada	7	0	0	5	206
New Hampshire	9	1	1	—	—
New Jersey	24	4	4	—	—
New Mexico	19	0	0	8	—
New York	90	3	2	18	1,217
North Carolina	40	1	1	1	145
North Dakota	11	0	0	—	—
Ohio	56	1	1	—	—
Oklahoma	52	1	1	—	—
Oregon	19	1	1	—	—
Pennsylvania	105	3	3	—	—
Puerto Rico	9	1	0	2	—
Rhode Island	19	2	0	7	258
South Carolina	30	0	0	11	220
South Dakota	4	1	0	—	—
Tennessee	25	1	1	—	—
Texas	104	3	2	26	1,724
Trust Territories	2	0	0	—	—
Utah	21	3	3	—	—
Vermont	6	0	0	1	—
Virgin Islands	1	0	0	—	—
Virginia	68	1	1	26	438
Washington	51	6	6	—	—
West Virginia	30	1	0	3	—
Wisconsin	41	0	0	—	—
Wyoming	7	1	1	2	—
TOTAL	1,877	90	77	414	16,460

Appendix E
Formerly Used Defense Sites on the NPL

This Appendix to the Annual Report provides summary information for each FUDS listed on the NPL as of the end of FY 1991. Key data are provided in Table E-1.

Table E-1
FUDS on the NPL

Site	State	HRS Score
Fisher-Calo, LaPorte	IN	52.05
Hastings Ground Water Contamination, Hastings	NE	42.24
Malta Rocket Fuel Area, Malta	NY	33.62
Marathon Battery Corporation, Cold Spring	NY	30.27
Nebraska Ordnance Plant (Former), Mead	NE	31.94
New Hanover County Airport Burn Pit, Wilmington	NC	39.39
Ordnance Works Disposal Areas, Morgantown	WV	35.62
Phoenix-Goodyear Airport, Goodyear	AZ	45.91
Sangamo Electric Dump/Crab Orchard National Wildlife Refuge (DOI), Carterville	IL	43.70
Weldon Spring Ordnance Works, St. Charles County,	MO	30.26

Fisher-Calo
LaPorte, Indiana

Service:	Department of War
Size:	443 Acres
HRS Score:	52.05
Base Mission:	Ordnance plant
IAG Status:	Not Applicable
Action Dates:	Placed on NPL September 1983; RI completed May 1989; FS completed April 1990; ROD signed August 1990
Contaminants:	Organic solvents, PCBs, inorganics, polynuclear aromatic hydrocarbons
DOD Funding to Date:	$316,150

Preliminary Assessment/ Site Inspection (PA/SI)

The former Kingsbury Ordnance Plant (KOP), constructed by Todd and Brown for the Department of War (later the DoD), began explosives manufacturing and loading operations in 1941. From 1946 through 1951, KOP was operated by the U.S. Government Ordnance Department and was used for storage and demilitarization of explosives. The American Safety Razor Company operated the plant and manufactured ordnance under government contract from 1951 until 1959, when the plant was placed on inactive status. While the plant was on inactive status, it was managed by the U.S. Rubber Company. In 1964, the property was purchased by the Kingsbury Industrial Development Management Corp. and the State of Indiana Department of Parks and Recreation (Fish and Wildlife Division) from the General Services Administration.

The Fisher-Calo Superfund Site is 443 acres, approximately 3 percent of the previous ordnance works acreage. The contamination is believed to stem from the activities of the Fisher-Calo Chemical and Solvents Corp. (FCC). FCC was primarily involved in the packaging, storage, and distribution of industrial chemicals as well as the reclamation of waste paint and metal finishing solvents. Drum storage, burial, and disposal activities have been cited by state and federal agencies.

The primary exposure pathway is through the ground water. The contaminant concentrations in each identified contaminant plume could present an unacceptable risk to human health. Water wells in the vicinity are at risk due to the migration of the contaminant plumes.

DoD received notices from EPA in regard to the Fisher-Calo Superfund Site. Conversations with the EPA project manager and EPA's counsel have indicated their initial concern was based on the asbestos siding used to construct the buildings. Any expansion of interest will apparently be based only on any specific contaminants attributed to DoD discovered during the expanded sampling work being performed by the PRP Committee's consultant. Participation in negotiations with the PRPs will be dictated by the results of the PRP consultant's expanded sampling/ analysis and quality assurance of the explosives results from splits taken by USACE, Omaha District.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was completed in May 1989, and an FS was completed in April 1990. Both the RI and FS were performed by EPA contractors.

The RI included geophysical surveys to locate buried drums or tanks; monitoring well installation; soil, sediment, and surface water sample analysis; soil gas field screening; hydrogeologic testing; and aquifer measurements.

Surface water samples from a discharge lagoon at one of the processing areas contained inorganic compound contamination and the sediment sample from the same location contained PCBs and other organic contaminants. Other pond areas were contaminated with inorganics and solvents.

Fisher-Calo
LaPorte, Indiana

(Continued)

Surface soils were contaminated with solvents, inorganics, and PCBs. Many surface soil contaminants were detected in the subsurface soils and the ground water.

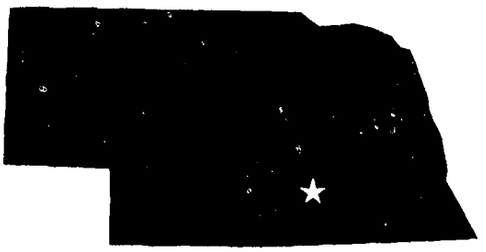
Ground water contamination included chlorinated organic solvents and VOCs.

Remedial Design/ Remedial Action (RD/RA)

The ROD was signed on August 7, 1990 and specifies a complex remedy. The ROD includes excavation and incineration of soils containing semi-volatiles and PCBs above established cleanup levels. Soil flushing or, if proven effective, soil vapor extraction for VOC contaminated soils, also is specified. Incinerator ash testing is to be performed to determine the disposal location of the ash. Ground water extraction, treatment, reinjection, and monitoring, as well as development of an asbestos handling program, are planned. A buried drum investigation and removal of drums, tanks, and containers also will be performed.

The RD/RA has not been started. Special Notice letters were issued October 10, 1990, allowing 60 days for the PRPs to make a proposal to EPA. There has not been any conclusive information showing significant DoD contaminant contribution. Additional investigative work is planned.

Hastings Ground Water Contamination
Hastings, Nebraska



Service: Navy

Size: 2,600 Acres

HRS Score: 42.24

Base Mission: Ammunition production, loading, and storage

IAG Status: Not Applicable

Action Dates: Placed on NPL 1986; ROD signed 1990

Contaminants: Explosive compounds, VOCs and metals in ground water and soils, semi-volatiles (PAHs) in soils

DOD Funding to Date: $10.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

The 48,753-acre Blaine Naval Ammunition Depot (NAD) was placed on the NPL in 1986 as one of seven subsites of the Hastings Ground Water Contamination Site. The facility was decommissioned between 1958 and 1966 and portions of the property transferred to the Nebraska National Guard, the Department of Agriculture and the Air Force or sold to private parties. The northwest portion of the former NAD, contains a community college and the Hastings East Industrial Park subsite (HEIP). The HEIP subsite contains much of the area where munitions production occurred. A PA/SI was not conducted at this site. However, EPA divided the former NAD into townships and contracted for PAs for each township under the Alternative Remedial Contract Strategy (ARCS) program. Those PAs involved little sampling and, under the terms of an IAG expected to be executed in the near future, the USACE Kansas City District will revisit the question of whether contamination exists at those areas. The USACE Huntsville Division conducted PAs and some clearance operations for explosive ordnance contamination and UXO in 1990 and 1991.

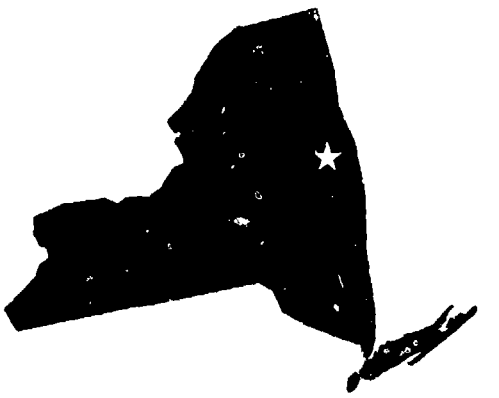
Remedial Investigation/ Feasibility Study (RI/FS)

During the RI, two phases of field work were conducted which involved the installation and sampling of monitoring wells, surface water, soils, sanitary sewers, and catch basins, borehole geophysical surveys, soil borings, and an ambient air quality survey. The RI data were used to prepare a baseline risk assessment, which concluded that "an unacceptable level of risk may be associated with human activities at this site." Soil and ground water are contaminated with explosive compounds, metals and semi-volatile organic compounds. Five Operable Units (OU) have been designated by EPA at the former NAD. Three OUs are associated with the HEIP subsite and are: surface soil (OU #1), ground water (OU #2) and vadose zone (OU #3). Another OU covers three subsites located in the southeast portion of the former NAD (OU #4), and one OU covers the rest of the former NAD (OU #5). An RI/FS was completed for OU #1 in August 1990. RI/FS reports are in progress for OUs #2, #3 and #4. A ROD was signed for OU #1 in September 1990. RODs are scheduled for OU #2 in February 1993 and OU #3 in November 1993.

Remedial Design/ Remedial Action (RD/RA)

RD for OU #1 is in progress and is scheduled for completion in 1993. The estimated cost of OU #1 is $45 million. Based on the results of the OU #4 RI/FS, contaminated surface soils from other areas of the former NAD may be included in the HEIP RA project. A RA was completed in late 1990 at the Naval Yard Dump which is included in OU #4. This RA project targeted surface debris and exposed drums.

Malta Rocket Fuel Area
Malta, New York



Service: Army and Air Force

Size: 196.36 Acres

HRS Score: 33.62

Base Mission: Research and Development

IAG Status: Participation Agreement signed 1990

Action Dates: Placed on NPL 1987; PA/SI completed 1989

Contaminants: Carbon tetrachloride, chloroform, PCBs, trichloroethylene, boron

DOD Funding to Date: $204,390

Preliminary Assessment/ Site Inspection (PA/SI)

The Malta Rocket Fuel Area was established by the Army in 1945 and used for rocket engine and exotic rocket fuels testing. This site was a GOCO facility. General Electric was the contractor that operated the facility from 1945 to 1964 for the federal government. At that time, the property was conveyed to the New York State Atomic and Space Development Authority. Hazardous substances were found in drinking water, surface water, septic tank liquid, and sludge, and in containers located on-site. An Early Warning Monitoring System has been installed upgradient from several public wells, which are located downgradient from the site.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA has issued a unilateral order to all non-federal PRPs for the purpose of conducting an RI/FS. EPA has approved the RI work plan. Field work is scheduled to begin in October 1991.

USACE, on behalf of DoD, successfully negotiated a sidebar agreement with the other PRPs, obligating DoD to 37 percent of the cost of the RI/FS.

Remedial Design/ Remedial Action (RD/RA)

Not identified yet.

Marathon Battery Corporation
Cold Spring, New York

Service: Army

Size: 820 Acres

HRS Score: 30.27

Base Mission: Production of Nickel-Cadmium Batteries

IAG Status: Not Applicable

Action Dates: Placed on NPL 1981; Area I ROD signed September 1986; Area II ROD signed September 1988; Area III ROD signed September 1989

Contaminants: Cadmium, nickel, cobalt, pesticides, VOCs, base/neutral extractable compounds

DOD Funding to Date: $280,000

Preliminary Assessment/ Site Inspection (PA/SI)

The Marathon Battery site is located on the east bank of the Hudson River in the village of Cold Spring, New York. It was constructed in 1952 for the U.S. Army Signal Corps for the production of nickel-cadmium batteries. Initial operations were contracted to the Sonotone Corporation. In September 1962, Sonotone Corporation purchased the plant and added 35,000 square feet of production area. Between 1962 and March 1979, the plant was owned and operated by various private parties. In November 1980, Merchandise Dynamics, Inc. purchased the facility for a book storage and distribution facility. Marathon Battery Co.; Gould, Inc.; and Merchandise Dynamics, Inc. have been named as PRPs along with the Army. High concentrations of heavy metals were found in the marsh sediments below the outlet of the storm sewer that previously served as an emergency outlet. Concentrations of metals also have been found in the soils of the plant property and adjacent residential areas and in the building dust. The area is used by local residents for fishing, crabbing, boating, and nature observation.

In 1972, Marathon Battery Co.; Sonotone Corp.; Clevite, Inc.; and Gould, Inc. were required to remove all deposits of cadmium in excess of 900 mg/kg net weight from the Kemble Avenue storm sewer outfall area, the channel connecting the outfall area to the main body of East Foundry Cove, and the area just west of and adjacent to the marsh in East Foundry Cove. Between November 1972 and July 1973, dredging was conducted in East Foundry Cove. The dredge spoils were de-watered and buried in a clay-lined underground vault on the plant property. Studies conducted from 1976 to 1980 by NYSDEC, EPA, and New York University indicated, however, that East Foundry Cove was still contaminated, much of it at concentrations greater than 900 mg/kg.

Remedial Investigation/ Feasibility Study (RI/FS)

The site consists of three distinct areas: Area I - 270 acres of Constitution Marsh and 14 acres of East Foundry Cove Marsh; Area II - the former battery plant and property (11 acres), the dredge spoils vault, and affected residential property surrounding the plant; and Area III - 492 acres of open water of the Hudson River in the vicinity of the Village of Cold Spring pier and West Foundry Cove and 34 acres of tidal flat and East Foundry Cove. The State of New York and the EPA, with input from the PRPs, have conducted an RI/FS for all areas and issued RODs. EPA issued an Administrative Order to the PRPs on March 26, 1989 for the building decontamination, consisting of power washing and vacuuming for cadmium, dust removal, book cleaning, and disposal.

Marathon Battery Corporation
Cold Spring, New York

(Continued)

Contamination in Areas I and III

Water and sediment sampling revealed contamination with cadmium, cobalt, and nickel throughout the upper 50 cm of sediment in the Pier Area and West Foundry Cove. In East Foundry Cove, cadmium contamination in surficial sediments is found only in the 0 to 10 cm depth.

Surface water contamination by cadmium, cobalt, and nickel was not significantly different among stations during this investigation. No significant contribution of sediment-bound metals to the Hudson River could be determined from the results of this investigation.

Concentrations of the contaminant metals in surficial sediments were found to be in the thousands, tens of thousands, and hundreds of thousands of mg/kg in East Foundry Cove Marsh sediments near the Kemble Avenue storm sewer outfall. Cadmium concentration levels in surficial sediment samples collected from Constitution Marsh and Constitution Pond at 40 to 50 cm in depth had a mean cadmium concentration of 11 mg/kg with a range of 5 to 25 mg/kg. The only deep sediment sample (80 to 90 cm) that was above the detection limit had a cadmium concentration of 41 mg/kg.

Contamination in Area II

The RI/FS was prepared by an EPA contractor in April 1988. Five different media were sampled during the RI: surface soils, subsurface soils, ground water, and dust and concrete borings from the former battery plant. All media were found to be contaminated by the activities performed at the plant. On-site soils were found to be contaminated with heavy metals, VOCs, base/neutral extractable compounds, and pesticides. Levels of metal contamination decrease with distance from the former battery plant and with depth from ground surface. Metal contamination is limited to the upper 60 to 90 cm (2 to 3 feet) of the soils. The sources of this contamination are believed to be air emissions from former ventilation units and contaminated debris removed from the building but still littering the site.

Contamination in Area III

Dust samples from the building and book surfaces were analyzed for cadmium, cobalt, and nickel. Cadmium concentrations as high as 15,300 mg/kg were found. The mean concentrations of cadmium was 5,946 mg/kg. Cobalt concentrations ranged from 1.2 to 462 mg/kg, with a mean of 33.26 mg/kg, while nickel dust concentrations ranged from 36 to 21,500 mg/kg, with a mean of 6,771 mg/kg.

Approximately 5,000 cubic yards of sediment were deposited in an underground vault located on the former battery plant grounds in 1972. These sediments have cadmium concentrations ranging from 1,000 to 3,000 mg/kg. Five monitoring wells were installed around the perimeter of the dredge spoils vault, and subsurface soils and ground water were analyzed to determine whether the cadmium, cobalt, and nickel contaminated sediments had leaked from the vault. These analyses showed that contaminated sediments have not migrated from the vault.

Remedial Design/ Remedial Action (RD/RA)

The selected remedy for Areas I and III is hydraulic dredging, sediment thickening, fixation, and off-site disposal. The no action (monitoring) alternative was selected for Constitution Marsh.

The selected remedy for Area II has three specific components: ground water, soils and building dust, and the sediment vault. The no action alternative selected for the ground water requires no active cleanup effort, but does require monitoring, public education, and maintenance. Building decontamination/soil excavation/fixation/-enhanced volatilization/off-site disposal are required for the soils and building dust component. The vault cleanup is composed of sediment excavation/chemical fixation/off-site disposal.

Building decontamination is being implemented by Marathon under an Administrative Order. The remedial action for Areas I, II and III is being implemented by EPA through an IAG with the New York District. EPA is financing the remediation with mixed funds. The Army and Marathon Battery have signed a Consent Decree for Area II. Gould Inc. has not. Negotiations of the Consent Decree for Area I and III are pending. The present circumstances indicate settlement may have to be reached through litigation.

Nebraska Ordnance Plant (Former)
Mead, Nebraska

Service: Army

Size: 17,214 Acres

HRS Score: 31.94

Base Mission: The former Ordnance Plant produced 100- to 12,000-pound aerial bombs during World War II and the Korean Conflict; Currently used as an Agricultural Research Station for University of Nebraska

IAG Status: Signed September 1991

Action Dates: Placed on NPL 1990; RI/FS initiated 1989

Contaminants: Explosives, volatiles, PCBs

DOD Funding to Date: $3.23 million

Preliminary Assessment/ Site Inspection (PA/SI)

The DoD property was transferred to various groups and individuals in 1962. The major owners are currently the University of Nebraska and the Nebraska National Guard. The major portions of the former Nebraska Ordnance Site investigated included four bomb loading lines, a demolition area, a burning ground, a crystallizing plant, a bomb booster area, and various support buildings. Explosive residues were found in the soils adjacent to three bomb load lines and two explosives compounds were identified in a ground water sample taken near load line No. 2. TCE was found in three ground water monitoring wells. Bottled water is being provided to one family in the vicinity due to contamination found in their private wells.

Remedial Investigation/ Feasibility Study (RI/FS)

Additional soil and ground water samples have been taken to determine the extent of contamination. Initial sampling results have indicated that two major plumes of contamination exist. Additional exploration will be conducted to clearly define the plume boundaries. A TRC has been formed and includes representatives from the EPA, Nebraska Department of Environmental Control, Nebraska Department of Health, Lincoln Water System, Natural Resource District, University of Nebraska, and USACE.

Remedial Design/ Remedial Action (RD/RA)

Preliminary activities on RD/RA have begun; however, the major portion will be conducted after the completion of the RI/FS activities.

New Hanover County Airport Burn Pit
Wilmington, North Carolina

Service: Army and Air Force

Size: 4 Acres

HRS Score: 39.39

Base Mission: World War II Bomber Command and Vietnam Era Aerospace Defense Command Airfield

IAG Status: PRP agreement signed 1990 (removal action)

Action Dates: Placed on NPL 1989; PA/SI completed 1987

Contaminants: Heavy metals, semi-volatiles, VOCs

DOD Funding to Date: $132,393

Preliminary Assessment/ Site Inspection (PA/SI)

The site had several fire training stations, which consisted of a main burn pit, an above-ground fuel storage tank, a fire smoke house, one railroad tanker car, and a number of old automobiles used for fire training. The PA/SI was conducted by the State of North Carolina. Contaminated fuels were found in the 10,000-gallon above ground fuel storage tank, which is connected to the various fire training stations. DoD, New Hanover County, Cape Fear Technical Institute Foundation (Community College), and the city of Wilmington, North Carolina have been identified as PRPs. Past practices involved placing crude oil recovered from spills and storage tank waste bottoms into the burn pit, igniting the contents, then extinguishing the fire. DoD conveyed the property to New Hanover County in 1977.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA completed the RI in August 1991 and provided a copy of the draft RI report to the PRPs for comments. EPA will also conduct the FS which is scheduled for March 1992.

The non-federal PRPs have signed a Consent Order issued by EPA for the removal of surface contamination in and around the main burn pit, which poses a threat to human health and the environment. This removal action was completed in November 1990. USACE has successfully negotiated a sidebar agreement with the other PRPs to provide 25 percent of the cost for the removal action.

Remedial Design/ Remedial Action (RD/RA)

EPA will conduct the RD phase, and has indicated that PRPs will have the opportunity to conduct the RA if the PRPs can agree on a negotiated percentage of responsibility.

Ordnance Works Disposal Areas
Morgantown, West Virginia

Service: Department of War

Size: 825 Acres

HRS Score: 35.62

Base Mission: Ordnance Plant

IAG Status: Not Applicable

Action Dates: Placed on NPL June 6, 1986; RI/FS for OU 1 was completed January 1988; Second (revised) ROD for OU 1 was signed September 29, 1989; the RI/FS for OU 2 was started in August 1990

Contaminants: PCBs, inorganics, carcinogenic polynuclear aromatic hydrocarbons, arsenic, mercury

DOD Funding to Date: $285,000

Preliminary Assessment/ Site Inspection (PA/SI)

The ordnance plant was built by DuPont in 1941 to produce ammonia by coking coal. The plant expanded throughout World War II producing coke, crude tar, ammonia, methanol, hexamine, formaldehyde, light oils, higher alcohols, and heavy water. The plant is separated into two OUs. OU #1 consists of the landfill and an adjoining lagoon area which was built after DoD disposed of the site. OU #2 covers the remainder of the plant. The focus of OU #2 will be the process areas. The portions of the site presently owned by General Electric, for their plastics intermediate plants, are not included in the study area. They are already involved in RCRA enforcement activities with EPA.

The site was sold in 1962 to Morgantown Community Association and immediately transferred to Morgantown Ordnance Works, Inc., which began salvage operations at the plant. Prior to the sale of the plant, DoD had leased the plant to several operators.

The major contaminants are polynuclear aromatic hydrocarbons, PCBs, arsenic, and mercury. The PCBs were at the drum staging area and were remedied in 1984. Catalyst pellets are prevalent at OU #1 and some consist of non-leachable heavy metals.

The potential receptors of principal concern are local business employees and visitors who might inhale contaminated dust/volatilized chemicals or otherwise be exposed to site-associated chemicals. Possible hot-spots are located on OU #2 where exposure to site visitors might occur by the direct contact routes of incidental ingestion and dermal absorption. OU #1 may provide similar exposure pathways if the future use scenario is adopted. Construction activities at the landfill/former lagoon area is the future use scenario described in the RI/FS for OU #1.

EPA has issued Consent Orders on OU #1 and OU #2. DoD was not named in the orders, but has offered a percentage proposal to the other PRPs. The proposal is based on DoD's investigation of the site history. A contractor was selected, and at last discussion was awaiting approval by EPA. The funding for the RI/FS being performed by Radian Corporation on OU #2 was negotiated among the active PRPs, with DoD contributing 30.24 percent of the RI/FS cost.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS for OU #2 is underway. The RI/FS for OU #1 was contracted by EPA and was completed in January 1988.

The RI/FS for OU #1 developed risk-based cleanup levels for arsenic, PAHs, PCBs, and mercury. All test pits located in the landfill area showed arsenic and PAHs above cleanup levels, with higher concentrations in the upper portions of the landfill. PAH concentrations exceed cleanup levels in an area of approximately 0.7 acres and to depths of six feet. Mercury was

Ordnance Works Disposal Areas
Morgantown, West Virginia

(Continued)

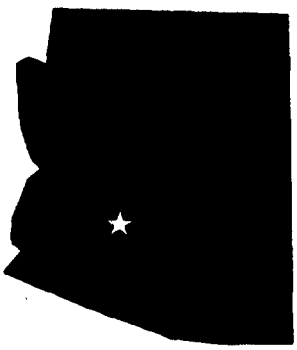
detected in a water-filled trench in the open alley way splitting the main process building. This is part of the processing area of OU #2.

Remedial Design/ Remedial Action (RD/RA)

The second (revised) ROD for OU #1 prescribes a preferred remedial action alternative and a contingency remedial action alternative. The preferred alternative includes installation of a RCRA Subtitle C cap on the landfill, excavation of inorganic hot-spots exceeding the risk-based cleanup levels, and solidifying and placing the excavated material in the landfill. An on-site bioremediation treatment bed will be used on excavated organic contaminated soils and sediments. Environmental and ground water monitoring also will be performed.

Should predesign studies show that treatment levels specified cannot be achieved in a reasonable timeframe, or the PRP group elects to perform the contingent remedial action alternative initially, the bioremediation treatment method will be revised to the contingent remedial action alternative of soil washing.

Phoenix-Goodyear Airport
(formerly Litchfield Park NAF)
Goodyear, Arizona



Service: Navy

Size: 750 Acres

HRS Score: 45.91

Base Mission: Acceptance, modification, preservation, depreservation, and storage of Naval aircraft

IAG Status: Not Applicable

Action Dates: Placed on NPL 1983; OU RI/FS and ROD completed 1987; RI/FS and ROD for the Final Remedy completed 1989

Contaminants: Trichloroethylene

DOD Funding to Date: $2.845 million

Preliminary Assessment/ Site Inspection (PA/SI)

The southern portion of the site includes the Loral facility (formerly Goodyear Aerospace) and the Phoenix-Goodyear Municipal Airport (formerly Litchfield Park Naval Air Field). From 1941 to 1987, Goodyear owned and operated an industrial manufacturing/assembly facility for manufacturing parts and modifying and assembling aircraft. Maintenance operations included vapor degreasing operations using TCE, plane washing, application of spraylat, and installation of kits.

TCE contamination was found in soils and ground water. Goodyear, Loral, the city of Phoenix, and DoD have all been identified as PRPs. In May 1988, USACE reached a cost share agreement with Goodyear for the OU that consists of the remediation of the Subunit A aquifer. Further negotiations or litigation are pending.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA completed RI/FS work in 1989. Contaminants found in soil and ground water include organic compounds.

Ground water is found at depths of 50 to 60 feet below the surface, with the shallowest water-bearing sediment defined as Subunit A. This aquifer is separated by a clay rich unit, Subunit B, from a deeper aquifer, Subunit C. Subunit C is encountered from 190 to 300 feet below the surface and is a primary source for drinking water. Subunit A is contaminated by a 7,000-foot long plume extending southwestward from the developed portion of the site. This plume is estimated to contain 6,500 pounds of TCE. Subunit C has a broad area of contamination, extending at very low concentrations, under 10 ppb of TCE, up to three miles from the site. Higher concentrations are limited to the vicinity of the developed portion of the site. Soil contamination has been identified based on numerous soil borings conducted at the developed portion of the site. Soil concentrations have been measured up to 4,400 ug/kg (ppb). Soil contamination has been found in borings drilled on both former Goodyear and former Navy property. Contamination may largely be the result of waste generated at the Goodyear facility and disposed in storm sewers that ultimately drain to the former Navy property.

Remedial Design/ Remedial Action (RD/RA)

A ROD was approved in September 1987 for the Section 16 OU which addressed VOC-contaminated ground water in Subunit A. Remedial action for this OU ground water was developed during an OU FS completed in 1987. EPA selected extraction and air stripping as the preferred remedy. Phase I of the OU is currently operating.

Phoenix-Goodyear Airport
(formerly Litchfield Park NAF)
Goodyear, Arizona

(Continued)

The Subunit A plume remediation includes ground water extraction and treatment, followed by reinjection of the treated water. The extraction wells remove water from the downgradient half of the plume. A second phase of the project will include extraction wells and piping to address the highest concentration portion of the Subunit A plume. The treatment plant will need to be modified for the second phase with the addition of off-gas carbon treatment. Phase II design is completed.

A ROD completed in September 1989 for the final remedy addresses the vadose zone and Subunits B/C ground water contamination for the entire site. The State of Arizona concurs with EPA's selected remedy. The 1989 ROD requires soil vapor extraction (SVE) for the area containing 99 percent of the mass of contaminants. Under this alternative, VOCs would be extracted through a system including areas on both the former Goodyear and Naval Air Field properties. The ROD requires that all SVE units be equipped with emission controls.

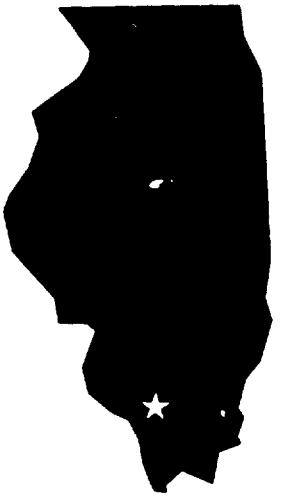
The cleanup of Subunit C requires the plume with concentration of TCE above drinking water standards be captured, piped to a central location, and treated. The treated water will be made available to the City of Goodyear, the local municipal water provider, discharged to a local irrigation district, or sent to recharge wells.

The SVE is intended to remove contaminants from soil in the target zone with minimal impacts on existing facilities and operations. Pilot studies for SVE were conducted in 1988 at the PGA site.

Goodyear Tire and Rubber Company has signed the consent decree to perform 100 percent of the work. The USACE Omaha District is negotiating a settlement with Goodyear.

A toxic tort claim has been filed against Goodyear and the Navy in two separate actions by Lufthansa Airlines. Lufthansa is a current tenant on the airport.

Sangamo Electric Dump/Crab Orchard National Wildlife Refuge (DOI)
Carterville, Illinois



Service:	Department of War
Size:	43,000 Acres
HRS Score:	43.70
Base Mission:	Ordnance manufacturing and loading
IAG Status:	Not Applicable
Action Dates:	Placed on NPL 1987; RODs signed for OU #1 and OU #2 1990; RI/FS initiated 1990 for OU #3; PRPs investigation initiated September 1990
Contaminants:	Organic solvents, inorganics, polynuclear aromatic hydrocarbons, munition residues, heavy metals, PCBs
DOD Funding to Date:	$2.10 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Illinois Ordnance Plant (IOP) located on the eastern portion of the U.S. Department of Interior's (DOI) Crab Orchard National Wildlife Refuge (CONWR) was operational from 1942 to 1945. The IOP served as a manufacturing/ loading site for high-explosive shells, bombs, and other components. The site was proposed for inclusion to the NPL in 1984, and listed in 1987. Thirty-three areas have been identified for site investigation and have been divided into four OUs.

The PA at the Refuge was completed by USACE in 1988 and limited to areas formerly associated with the IOP. The SI, which focused on 14 sites, was completed in April 1988. Results did not indicate widespread contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS has been completed for both the Metals OU and the PCB OU and RODs for both OUs have been issued. USACE awarded an RI contract to study the presence and magnitude of contamination at OU #3. Field work performed in April and May 1991 included installation of monitoring wells, soil borings, sediment sampling, and excavation of magnetic anomalies.

Additional remedial work may be required for all or part of the fourth OU.

Remedial Design/ Remedial Action (RD/RA)

The Omaha District awarded a contract on behalf of the DOI for a treatability study/remedial design for the Metals OU. This study is scheduled for completion in 1992. Work is proceeding with the RD/RA for the PCB OU. Further action for the Explosives/ Munitions OU and the Miscellaneous OU are pending completion of remaining RI/FS activities. The USACE Chicago District advertised a contract for demolition of unsafe structures in 1991. A January 1992 award is scheduled. Additional demolition contracts are scheduled for 1992.

Weldon Spring Ordnance Works
St. Charles County, Missouri

Service:	Army
Size:	15,577 Acres
HRS Score:	30.26
Base Mission:	Formerly used in support of the Ordnance Works Production Area (Bunkers, Mechanical Shop, and Housing)
IAG Status:	Pre-ROD IAG signed 1990; Effective August 1991
Action Dates:	PA/SI completed 1977; Listed on NPL 1990; RI/FS for Training Area completed 1990; RI for Ordnance Works completed 1991
Contaminants:	TNT, DNT, lead
DOD Funding to Date:	$4.4 million

Preliminary Assessme Site Inspection (PA/SI)

The Weldon Spring Ordnance Works is composed of two major components: the active portion, Weldon Spring Training Area (WSTA), is a 1,655-acre area where TNT and DNT were produced during World War II; the inactive portion, Weldon Spring Ordnance Works (WSOW), is a 15,577-acre area that provided support facilities. Adjacent to the active site is the 230-acre former Atomic Energy Commission (AEC) facility, which processed uranium from 1957 to 1966. The AEC facility is located on an area that was originally part of several TNT production lines. Shortly after the plant ceased operation in 1966, a part of the AEC site was returned to the Department of Army (DA) to construct a plant for the production of the herbicide Agent Orange. The extent of the radioactive contamination was greater than anticipated and therefore the project was canceled in Februa y 1969. The Army's involvement on the former AEC site resulted in a Memorandum of Understanding (MOU) with DOE requiring the Army to fund part of the costs associated with remediating the DOE chemical plant. Initial field investigations were conducted to determine the nature and extent of contamination at WSOW and WSTA. In 1943, water elevations and samples were collected from wells, springs, and surface waters at WSOW. Visual observations and colorimetric tests were used to identify areas where TNT contamination was indicated. In 1976, the U.S. Toxic and Hazardous Materials Agency (USATHAMA) conducted an environment assessment of WSTA. A records search and on-site investigation was carried out to estimate possible contamination by chemical, biological and radiological material and to assess the possible contaminant migration beyond the installation boundary. It was determined that the underground wastewater pipelines and several surficial locations remained contaminated from explosives manufacturing. An area containing radiological material in WSTA was identified, marked and fenced. Limited surface water quality data revealed low level concentrations of TNT in the vicinity of WSTA. USATHAMA identified several hazards on-site including partially destroyed buildings, abandoned cisterns, underground water-filled tanks and refuse from TNT manufacturing and military training exercises. Further research involved a records search and interviews with personnel who had either worked at the WSTA or had participated in a study of the area. Data collected indicated that the potential hazardous at the WSTA included contamination from explosives, radioactive materials, asbestos, DDT, sulfur and sodium compounds. The field phase entailed the identification of sources of soil and surface water contamination and the collection and analysis of soil, surface water, and sediment samples. Contaminants found in the soil included TNT, DNT, sulfates, and lead. No explosives contamination was found

Weldon Spring Ordnance Works
St. Charles County, Missouri

(Continued)

in the sediment or surface water samples. A surface investigation involved soil samples collection from one TNT plant, one sellite production plant, one waste treatment plant and both DNT processing plants. Samples from on-site and off-site surface waters and a burning ground were analyzed for nitroaromatic content, volatiles, semi-volatiles, sulfates, nitrates, sulfites, and metals. Additional sampling included soil samples from roadways for dioxin analysis and from power plant no. 1 for DDT content.

Remedial Investigation/ Feasibility Study (RI/FS)

A draft RI report was completed in June 1989. Over 5,000 soil samples were analyzed for TNT using a field screening technique. Samples from the wooden wastewater pipelines, ground water, springs, sediment, and area lakes were also collected and analyzed. A soil vapor survey of selected areas was conducted. The investigation was confined primarily to the current WSTA property. As a result of the investigation, several areas were identified as having contaminants present in various media. In October 1989, six additional sampling activities were conducted. These included 14 monitoring wells, resampling the 33 existing wells and 10 springs, air monitoring, soil sampling for lead, and wooden pipeline sampling. The TNT pipeline location was checked with ground penetrating radar at 270 locations. Preliminary information on the pipeline was gathered from 24 locations. Excavations were made at 16 locations and samples taken from 12 excavations.

Nitroaromatics and volatile organics were detected in the ground water, nitroaromatics and lead were detected in the surface soil, and nitroaromatics were detected in the wooden pipeline. Sampling activities under the WSOW RI/FS began in November 1990 and were completed in July 1991. A groundrules committee with representatives from DOE and USACE met periodically to insure there are no conflicts between the two agency's projects. Also, the Technical Review Committee, with representatives from Ft. Leonard Wood, Kansas City District, EPA, Missouri Department of Conservation, Francis Howell School District, DOE, St. Charles Countians Against Hazardous Waste, Missouri Research Park, Village of Weldon Spring Heights, and the St. Charles County Emergency Management Association meet periodically to insure their concerns are addressed in the remediation of the site.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities will begin after the RODs are signed for the site Operable Units. It is anticipated that design procurement will begin no later than 1995.

Appendix F
Base Closures

This Appendix to the Annual Report provides a list of military installations included in the Base Realignment and Closures Program (BRAC). Under this program, a total of 113 installations were identified for closure through two rounds of assessments, BRAC 88 and BRAC 90. BRAC 88 covered 86 installations while BRAC 90 covered 27 installations. The information presented in this Appendix was obtained from two documents: *Base Realignments and Closures, Report of the Defense Secretary's Commission* (December 1988), and *Defense Base Closure and Realignment Commission, Report to the President* (1991).

Base Closures	
BRAC 88	**BRAC 90**
Department of the Army	
Fort Douglas, UT Cameron Station, VA Presidio of San Francisco, CA Coosa River Annex, AL Navajo Depot Activity, AZ Fort Wingate, NM Nike Site Aberdeen, MD Lexington Depot, KY Pontiac Storage Facility, MI Alabama Ammunition Plant, AL New Orleans Military Ocean Terminal, LA Fort Sheridan, IL Army Material Technology Laboratory, MA Tacony Warehouse, PA Hamilton Army Airfield, CA Jefferson Proving Ground, IN Nike Philadelphia, NJ Nike Kansas City, MO Cape St. George, FL Kapalama Military Reservation, HI Stand-Alone Housing Installations (52 sites) Miscellaneous Properties (4 sites) **Total: 76**	Fort Benjamin Harrison, IN Fort Devens, MA Fort Ord, CA Sacramento Army Depot, CA Harry Diamond Lab Woodbridge Research Facility, VA **Total: 5**
Department of the Navy	
Naval Station New York, NY Naval Hospital Philadelphia, PA Naval Station Galveston, TX Naval Station San Francisco (Hunters Point), CA Naval Station Lake Charles, LA **Total: 5**	Construction Battalion Center, Davisville, RI Hunters Point Annex to Naval Station Treasure Island, CA Marine Corps Air Station Tustin, CA Naval Air Station Chase Field, TX Naval Air Station Moffett Field, CA Naval Station Long Beach, CA Naval Station Philadelphia, PA Naval Station Puget Sound, Sand Point, WA Philadelphia Naval Shipyard, PA **Total: 9**

Base Closures	
BRAC 88	BRAC 90
Department of the Air Force	
Chanute Air Force Base, IL George Air Force Base, CA Mather Air Force Base, CA Norton Air Force Base, CA Pease Air Force Base, NH **Total: 5**	Bergstrom Air Force Base, TX Carswell Air Force Base, TX Castle Air Force Base, CA Eaker Air Force Base, AR England Air Force Base, LA Grissom Air Force Base, IN Loring Air Force Base, ME Lowry Air Force Base, CO Myrtle Beach Air Force Base, SC Richards-Gebaur Air Reserve Station, MO Rickenbacker Air Guard Base, OH Williams Air Force Base, AZ Wurtsmith Air Force Base, MI **Total: 13**

List of Acronyms

AAFES	Army Air Force Exchange Service
AAP	Army Ammunition Plant
ABL	Allegheny Ballistics Lab
AD	Army Depot
ADA	Army Depot Activity
AEC	Atomic Energy Commission
AEDC	Arnold Engineering Development Center
AFB	Air Force Base
AFDW	Air Force District of Washington
AFIT	Air Force Institute of Technology
AFRB	Air Force Reserve Base
AFRC	Air Force Reserve Center
AFRTA	Armed Forces Reserve Training Area
AFS	Air Force Station
AGS	Aerospace Generation Squadron
AIMD	Aircraft Intermediate Maintenance Department
AMSA	Army Maintenance Support Activity
ANG	Air National Guard
ARDEC	Armament Research, Development, and Engineering Center
ASF	Aviation Support Facility
ASTROGRPDET	Astronautics Group Detachment
ATSDR	Agency for Toxic Substance and Disease Registry
AWQC	Ambient Water Quality Criteria
BDDR	Building Demolition and Debris Removal
BNA	Base-Neutral and Acid Extractable Organics
BRAC	Base Closure and Realignment Acts
CA	Cooperative Agreement
CB	Construction Battalion
CBC	Construction Battalion Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFC	Chlorofluorocarbon
CHESDIVNFEC	Chesapeake Division, Naval Facilities Engineering Command
CHESNAVFACENGCOM	Chesapeake Division, Naval Facilities Engineering Command
COMNAVDIST	Headquarters Naval District
CONUS	Continental United States
DA	Department of the Army
DDRE	Defense Depot Region East
DDT	Dichloro-diphenyl-trichloro-ethane
DDTC	Defense Depot Tracy California (now known as Defense Depot Region West-Tracy)
DEH	Directorate of Engineering and Hou ing
DER	Department of Environmental Resources
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DEWLINE	Defense Early Warning Line
DFSP	Defense Fuel Supply Point
DGSC	Defense General Supply Center
DIPEF	Defense Industrial Plant Equipment Facility
DLA	Defense Logistics Agency
DNSC	Defense National Stockpile Center

DNT	Dinitro-toluene
DoD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DPM	Defense Priority Model
DRMO	Defense Reutilization and Marketing Office
DSMOA	Defense and State Memorandum of Agreement
DTRESCEN	David Taylor Research Center
ECS	Equipment Concentration Site
EE/CA	Engineering Evaluation/Cost Analysis
E/P	Evaporation/percolation
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
ERADCOM	Electronics Research and Development Command
FASOTRAGRUPACDET	Fleet Aviation Specialized Operational Training Group
FASWTC	Fleet Antisubmarine Warfare Training Center
FCTC	Fleet Combat Training Center
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FLTRGGRA	Fleet Training Group
FLTSURSPTCMD DET	Fleet Surveillance Support Command Detachment
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
GAC	Granulated Activated Carbon
GOCO	Government Owned/Contractor Operator
GPM	Gallons per Minute
GWTP	Ground Water Treatment Plant
HAZMIN	Hazardous Waste Minimization
HRS	Hazard Ranking System
HSWWA	Hazardous and Solid Waste Amendments
HTW	Hazardous or Toxic Waste
HWD	Hazardous Waste Disposal
IAG	Interagency Agreement
IAP	International Airport
IAS	Installation Assessment Study
INACTSHIPDET	Inactive Ship Maintenance Facility Detachment
IRA	Interim Remedial Action
IRM	Interim Remedial Measure
IRP	Installation Restoration Program
IRTCG	Installation Restoration Technology Coordinating Group
ISV	In-Situ Volatilization
IWTP	Industrial Wastewater Treatment Plant
LAP	Load-Assembly-Pack
LBAD	Lexington-Bluegrass Army Depot
MAP	Municipal Airport
MCAGCC	Marine Corps Air-Ground Combat Center
MCAS	Marine Corps Air Station
MCB	Marine Corps Base

MCCDC	Marine Corps Combat Development Center
MCL	Maximum Contaminant Level
MCLB	Marine Corps Logistic Base
MCMWTC	Marine Corps Mountain Warfare Training Center
MCRTC	Marine Corps Reserve Training Center
MEK	Methyl Ethyl Ketone
MEP	Master Environmental Plan
MOU	Memorandum of Agreement
NAC	Naval Avionics Center
NADC	Naval Air Development Center
NADEP	Naval Aviation Depot
NAEC	Naval Air Engineering Center
NAF	Naval Air Facility
NALF	Naval Auxiliary Landing Field
NAPC	Naval Air Propulsion Center
NAS	Naval Air Station
NATO	North Atlantic Treaty Organization
NAVCAMS	Naval Communication Area Master Station
NAVENPVNTMEDU	Navy Environmental and Preventive Medicine Unit
NAVEODTECHCEN	Naval Explosive Ordnance Disposal Technology Center
NAVFAC	Naval Facilities
NAVHOSP	Naval Hospital
NAVMAG	Naval Magazine
NAVMARCORESCEN	Navy and Marine Corps Reserve Center
NAVMEDCOMNWREG	Naval Medical Command, Northwest Region
NAVPETOFF	Navy Petroleum Office
NAVPETRES	Naval Petroleum Reserve
NAVPHIBASE	Naval Amphibious Base
NAVRADSTA	Navy Radio Station
NAVRECCEN	Naval Recreation Center
NAVREGDENCEN	Naval Regional Dental Center
NAVRESFAC	Naval Reserve Facility
NAVRESMAINTRAFAC	Naval Reserve Maintenance Training Facility
NAVSCSCOL	Navy Supply Corps School
NAVSECSTA	Naval Security Station
NAVSHIPREPFAC	Naval Ship Repair Facility
NCO	Non-Commissioned Officer
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCS	Naval Communication Station
NCTAMS	Naval Computer and Telecommunication Area Master Station
NESEC	Naval Electronic Systems Engineering Center
NETC	Naval Education & Training Center
NFD	Navy Fuel Depot
NFRAP	No Further Response Action is Planned
NG	National Guard
NIROP	Naval Industrial Reserve Ordnance Plant
NMCRC	Navy and Marine Corps Reserve Center
NOS	Naval Ordnance Station
NOSC	Naval Ocean Systems Center

NPDES	National Pollutant Discharge Elimination System
NPGS	Naval Post Graduate School
NPL	National Priorities List
NPPS	Navy Publishing and Printing Service
NPPSO	Navy Publishing and Printing Service Office
NPRO	Naval Plant Representative Office
NRC	Naval Reserve Center
NRL	Naval Research Laboratory
NRL UWS REF DET	Naval Research Lab Underwater Sound Reference Detachment
NRTF	Naval Radio Transmitting Facility
NS	Naval Station
NSA	Naval Support Activity
NSB	Naval Submarine Base
NSC	Naval Supply Center
NSD	Naval Supply Depot
NSGA	Naval Security Group Activity
NSWC	Naval Surface Warfare Center
NSY	Naval Shipyard
NTC	Naval Training Center
NTIC	Naval Technical Intelligence Center
NUWES	Naval Undersea Warfare Engineering Station
NUSC	Naval Underwater Systems Center
NWC	Naval Weapons Center
NWS	Naval Weapons Station
NWIRP	Naval Weapons Industrial Reserve Plant
OBS	Observatory
OEW	Ordnance and Explosive Waste
OLF	Outlying Landing Field
OHW	Other Hazardous Waste
OMB	Office of Management and Budget
OMS	Organizational Maintenance Squadron
OSHA	Occupational Safety and Health Act
OU	Operable Unit
PA	Preliminary Assessment
PACAF	Pacific Air Force
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene
PDO	Property Disposal Office
PMRF	Pacific Missile Range Facility
PMTC	Pacific Missile Test Center
POL	Petroleum, Oil, and Lubricants
PPB	Parts per Billion
PPM	Parts per Million
PRP	Potentially Responsible Party
PWC	Public Works Center
RA	Remedial Action
RADC	Radioactive Disposal Committee
RCRA	Resource Conservation and Recovery Act of 1976

List of Acronyms

RD	Remedial Design
RD&D	Research, Development and Demonstration
RDX	Royal Demolition Explosive
RES TRNG	Reserve Training
RFA	RCRA Facility Assessment
RFI	Remedial Feasibility Investigation (RCRA Facility Investigation)
RI	Remedial Investigation
ROD	Record of Decision
RR	Rapid Response
RRS	Radar Remote Site
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SAT COM	Satellite Communication
SDWA	Safe Drinking Water Act
SFG RSL	Safeguard Remote Sprint Launch
SI	Site Inspection
SIMA	Shore Intermediate Maintenance Activity
SPCC	Ships Parts Control Center
SUPSHIP	Supervisor of Shipbuilding Conversion and Repair
SWMU	Solid Waste Management Unit
SWNAVFACENGCOM	Southwest Division, Naval Facilities Engineering Command
TCA	Trichloroethane
TCE	Trichloroethylene
TNT	Trinitrotoluene
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USARC	United States Army Reserve Center
USATHAMA	United States Army Toxic and Hazardous Materials Agency
USGS	U.S. Geological Survey
USMAWP	United States Military Academy, West Point
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound